The Mining Journal

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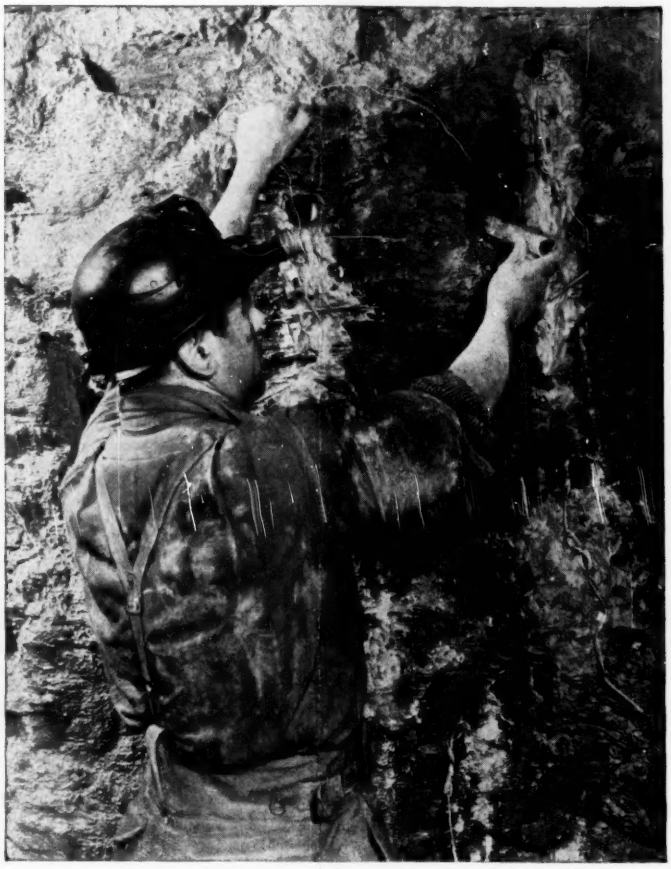

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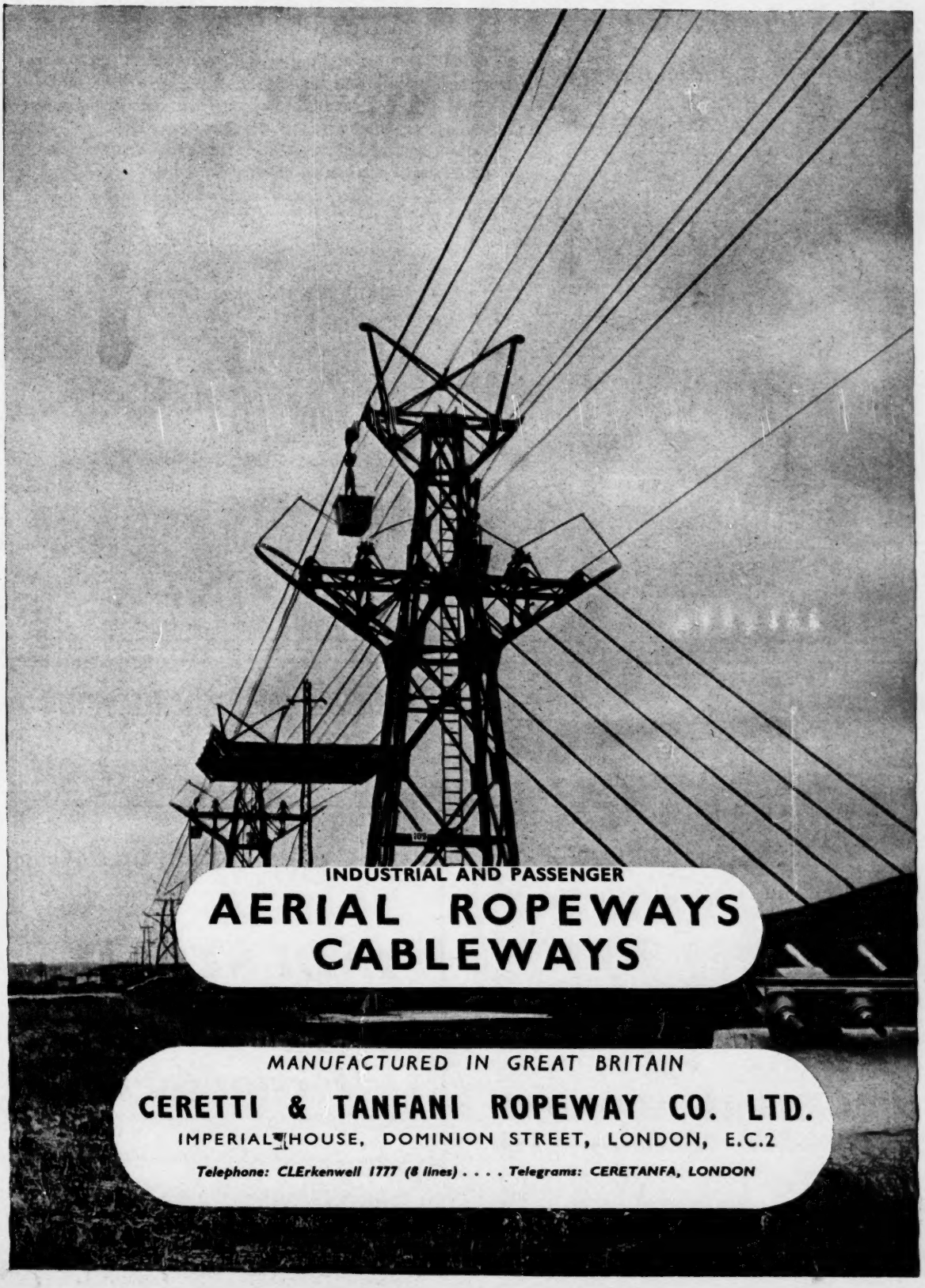
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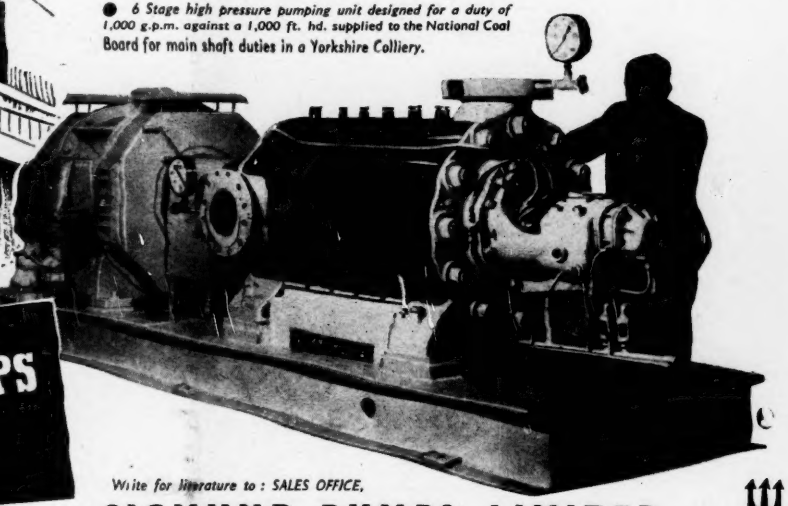

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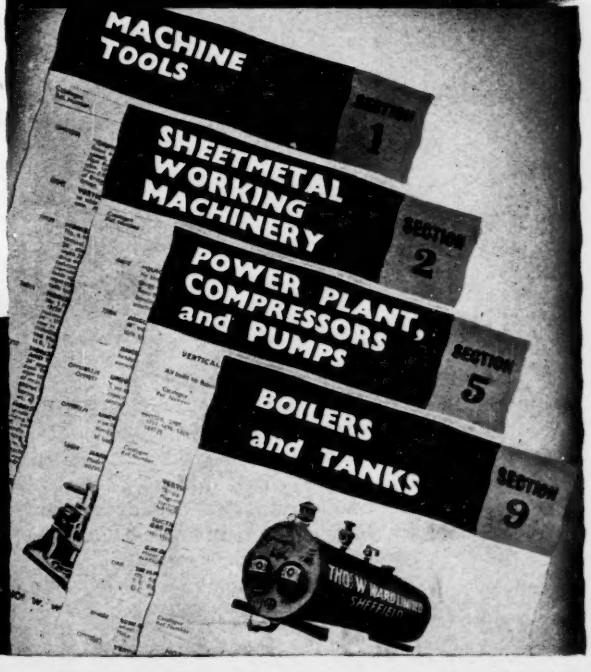

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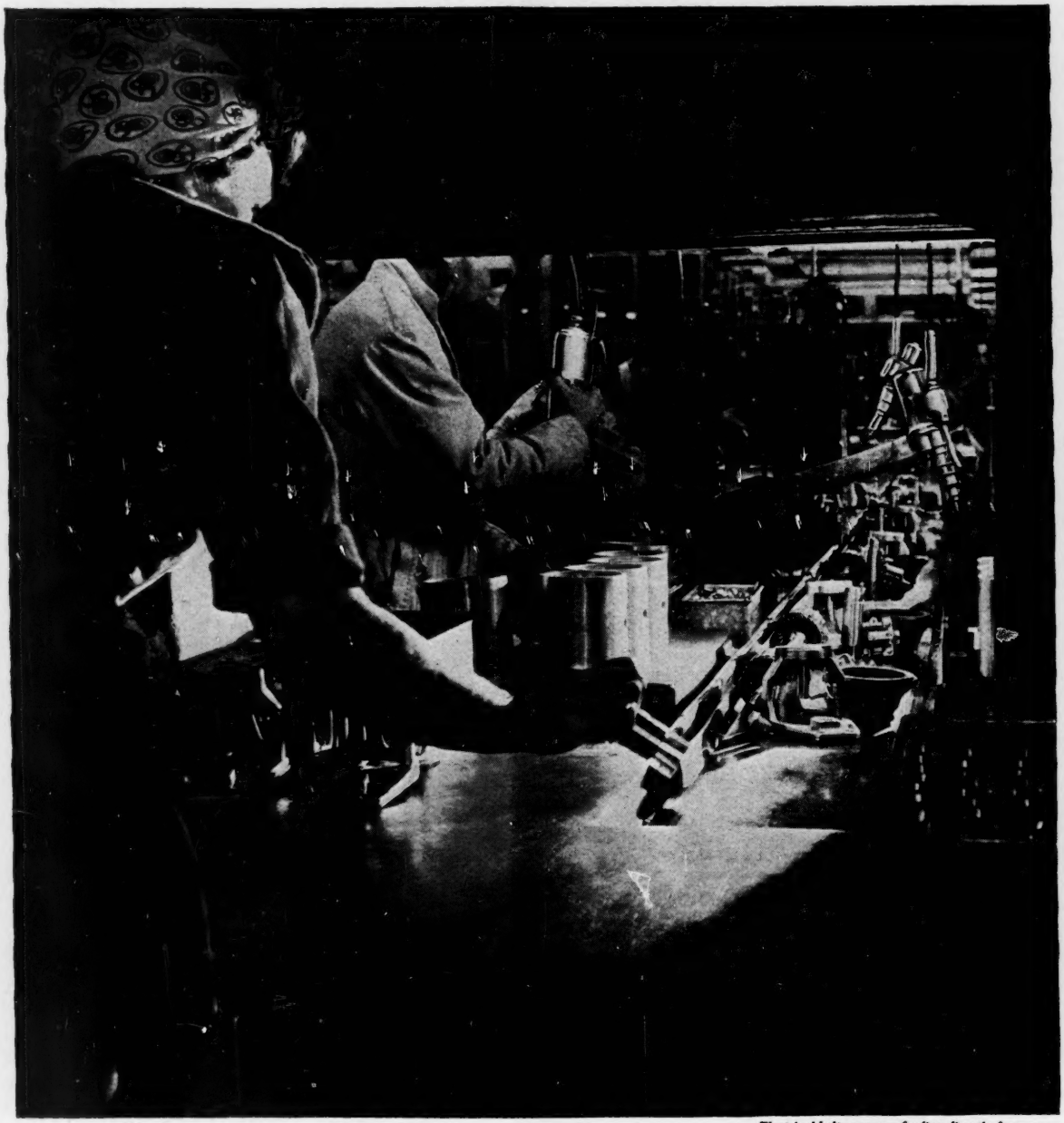

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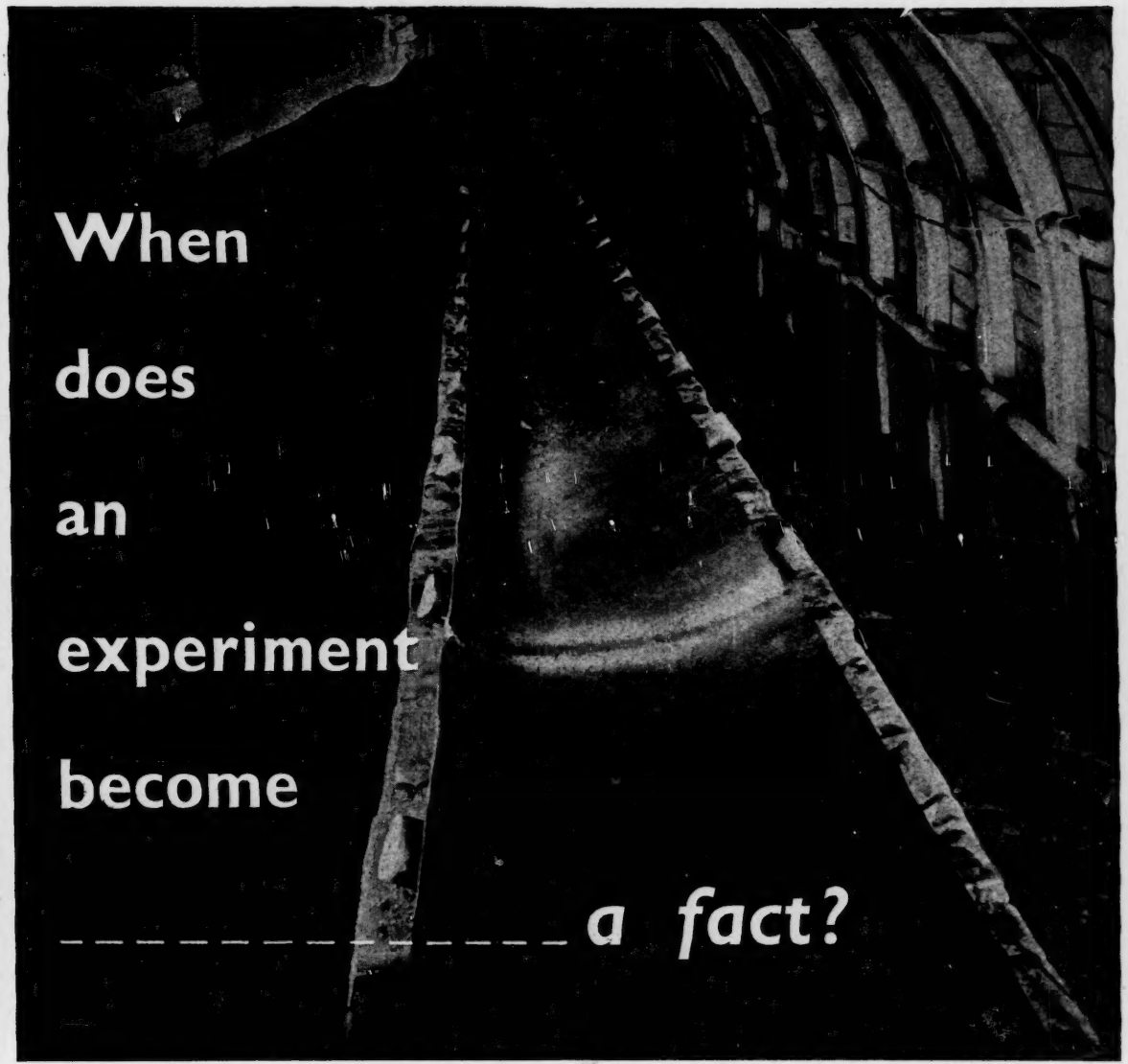

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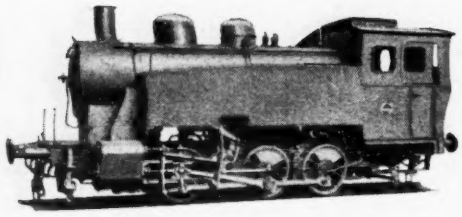

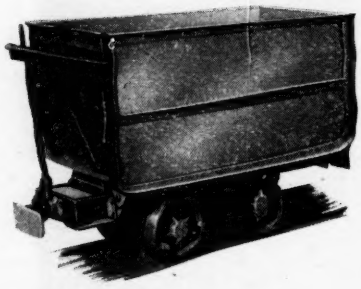

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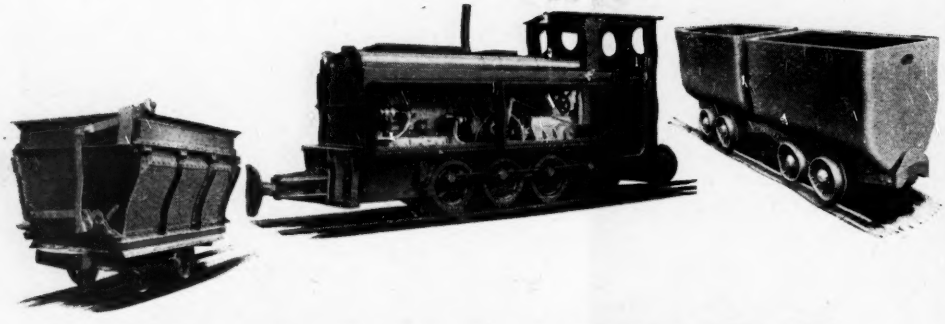

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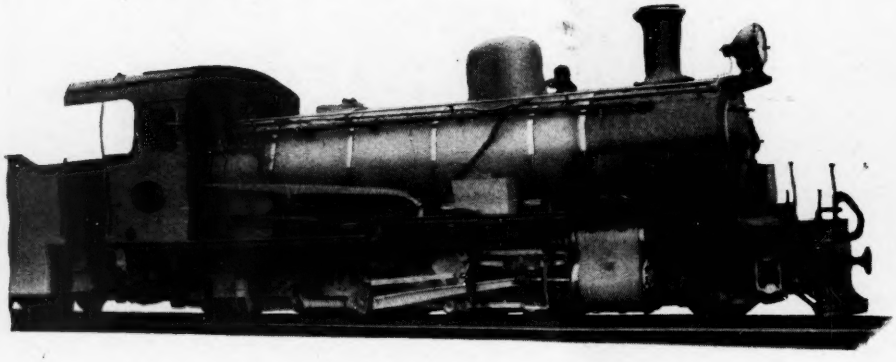

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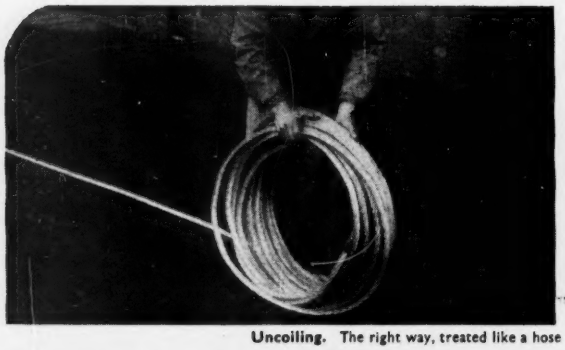
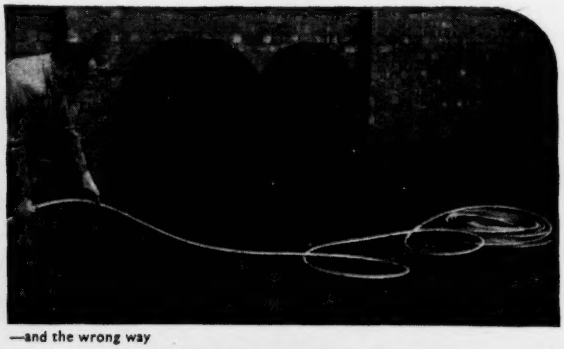


Uncoiling. The right way, treated like a hose



—and the wrong way

Unreeling. The right way, reel rotating freely

—and the wrong way

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NOTES AND COMMENTS

The Old Year and the New

We stand to-day on the threshold of a New Year: 1952 has been momentous in many ways but broadly may be said to have fulfilled the promise with which we viewed its opening 12 months ago. The arbitrament of a world war has so far been avoided; defence co-ordination among the great powers of the West has made important progress; and the policy of the Kremlin looks like being increasingly directed towards the elimination of "Capitalism" in Asia and acceptance of current Iron Curtain frontiers in Europe, together with the fomenting of all possible antagonisms among the free nations elsewhere.

At home and in the Commonwealth we have had to mourn the loss of a popular and devoted King and the accession of a young and gracious Princess, who has already established herself as a dynamic power in the affections of all members of the British Commonwealth and whose hold on their destiny is to be further demonstrated and consolidated at the coronation celebrations and economic deliberations next June. We are passing through a great constitutional revolution in the structure of the British Commonwealth and Empire in which the relationships between its various members are being fundamentally changed. Can the new nexus of our relations one with another be welded into a coherent organism as were those of the individual American States into the unity of the Great Republic? Looking even further afield, can the converging trend of United States and Commonwealth relations be more closely channelled? These are thoughts which must occupy our minds and inspire our policies in 1953.

The second most important trend of events has been the successful inauguration under Mr. Butler's inspiration of the restoration of our metropolitan industrial and financial position. 1952 saw the stormy cape of financial catastrophe passed and though there remain other danger points to be circumnavigated it is surely legitimate at this season of natural optimism to believe that they too will be successfully passed. We can, at least, congratulate ourselves on what has actually been accomplished in plugging the leak in our balance of external trading which threatened national bankruptcy sooner or later. This grim spectre is unfortunately not so generally recognized as it should be, indeed it has been suggested that the Government should do more to publicize the demon which is, by no means, even yet exorcized. Now that we are on firmer ground there may not be the same apprehension of causing panic by official plain speaking.

Turning to our own particular field of industry we have during the year seen a more reasonable appraisement of metal and mineral prices together with an increased freeing of various markets from departmental controls, permitting of a more realistic relationship with the demand of trade and industry. There have been in the past two years various influences contributing to the record values attained by almost all branches of mineral products—save gold and silver—but by and large the most potent has been the influence of United States policy, particularly in the almost scare extremes of national stockpiling with its inevitable imitation by other countries. Labour appetite—a combination of making hay while the sun shines with the consequent rise in the cost of living and automatically increased wage demands—has been another great inflationary influence and this will be watched with anxious attention till the course of United States economic policy under the new President and Republican administration in both these fields is revealed. A sensible reduction in the scale or rate of stockpiling would make for a further return of metal and mineral prices—especially for tin—to more normal levels. At the same time it should not be overlooked that current market prices are already approaching if they have not yet reached marginal levels in many mining districts, especially in the Western United States, and that any substantial contraction in supplies would soon reverse the falling tendency so widely experienced last year.

We must not ignore, however, the immense stimulus to the search for and opening up of fresh mines and mining fields, particularly in the less developed parts of the world which the metal inflation and the anxiety regarding future world supplies have set in motion. In this connection we may recall a fresh emergence of the American theory that there is bound to be an automatic and almost regular increase in the volume of national business and metal consumption corresponding to the growth of the United States population and material development. This conception is embodied in the Paley Report which its authors would have us accept as an apocalyptic vision of the shape of things to come. The intrusion of the United States elections since

the Report was published, has served to distract attention from this ambitious "raising of our sights" on the future, but it is obvious that in the mining and metal interest there are authoritative sceptics of the validity of many of its conclusions. Nor do we know how the new Republican Administration will regard a conspectus which demands so large a regimentation of trade and industry, international and domestic, when freedom from bureaucratic control and reversion towards *laissez faire* have figured so largely in their campaign propaganda.

Another feature of the past year has been the growth in many countries of the policy of nationalization of mines and mining companies. Shakespeare has reminded us that "the evil which men do lives after them" and we see the chickens of Socialist nationalization of our industry in this country coming home to roost in the rapid development of nationalization measures in countries like Persia, Bolivia, and Burma. The effectiveness of protests from Whitehall is blunted when such governments reply that what is sauce for the goose is sauce for the gander and that they are only imitating the example which we ourselves have set.

Some of the immense projects of new mineral development, more particularly in North America and Africa, promise fundamental changes in the character of mining finance. Here two separate and distinct points emerge. Firstly, American strategic concepts combined with point 4 policy continues to result in large U.S. Government investment in mining all over the world; and Secondly: taxation has reached the pitch where large individual savings no longer exist and it is becoming necessary to devise machinery through the institutional investors for soaking up the multitudinous very small savings available and channelling them into mining and other essential fields not traditionally regarded as the province of insurance companies and similar institutional investors. Since it is unfortunately no longer possible to look to London for the subscription by private investors and speculators of the enormous sums which can be called for, consolidation of big mining interests and an increasing dependence on Government sponsored finance promise great changes in the mechanics of company promotion and the structure of the mining markets. Mr. Menzies, since his return home from the Commonwealth Premiers' Conference, has already uttered a warning that our combined capital resources will have to be very selectively employed. We have, too, been frequently reminded in 1952 that mining taxation anomalies remaining under British law, particularly the lack of depletion allowances and the penal effect of profits tax on any risk-bearing development, all encourage widespread registration abroad while side-by-side with this we have yet to see a clear-cut Treasury policy on emigration of mining concerns.

There has been marked progress in the "new" metals, particularly those imparting high-heat qualities to alloys. Emergence of such metals as titanium and zirconium from batch production to continuous production will open the way to wide use. Increasing research has also been devoted to rare earths.

Pressure on mineral production increasingly calling for the economic development of lower grade deposits with the consequently greater demands on technical "know-how" at a time when the world in general and the U.K. in particular is faced with a growing shortage of newly trained mining engineers with specialized training is a growing problem.

No catalogue of important developments in the mineral industry can omit the rapid development of the sources of supply for atomic energy whether in a military or industrial context, though owing to the confidential character of most of the material little precise information is available. The importance of uranium as a by-product from South African dumps as well as from current crushings is of substantial importance to many Rand producers, even if the development of the hydrogen bomb suggests its future importance lies rather in the industrial field.

It is impossible in the space at our disposal to notice many other developments of the past year which directly or indirectly help to make up the mining picture as it presents itself at the moment, *e.g.*, the growing difficulties which *apartheid* and the colour bar project in South and Central Africa, the acute forms which nationalization may assume in countries with little understanding of the essentially international character of the mineral industry and anxious to try their wings in new found independence both economic and political. We can only hope that with reflection they will follow the well known Italian caution *chi va piano va sano*, while we would remind all, whether governments, managements or workers, that the declared adversary of the liberties of the free world still roams the Kremlin as a roaring lion seeking whom he may devour. In this connection it is well to remember dictator Stalin's recent enunciation of a policy of an industrial no less than a military arm in his plan of overthrowing Capitalism by Communism.

American Proposals to Conserve Her Strategic Materials

The 100-page report of the National Security Resources Board to President Truman concerning plans to guard against exhaustion of America's mineral resources, was made public on December 22, 1952, according to the *American Metal Market*. The report represents a partial answer to a request for advice on what initial action should be taken to fulfil the recommendations of the President's Materials Policy Commission made earlier this year, the so-called Paley Report.

Among the proposals listed in the N.S.R.B. report are first, United States participation with Canada in the construction of the St. Lawrence Seaway and Power Project; second, a modernized mineral leasing system as an alternative to staking claims on public lands; third, the reduction or elimination of tariffs on raw materials, in which the country is deficient; fourth, more mineral technological assistance for underdeveloped areas of the world; and fifth, a greater participation of private enterprise in the development of nuclear energy.

The Board also recommended that the Interior Department draft the broad outlines of a coal research and development programme with participation by Federal and State agencies, industry and labour units and private research organizations. It was suggested that Congress provide funds so that the Department of Interior can start this programme.

The report stated that in the long term view even those material resources now classified as exhaustible may prove to be renewable as it was learned how to convert and to utilize the elements available in the oceans and the atmosphere as well as in the land surface of the earth.

In urging a mineral leasing system as an optional alternative to claim-staking on public lands, the Board suggested that the Interior Department prepare draft legislation to carry this out. It said the Defence Materials Procurement agency vigorously opposed the leasing proposal, under the belief that abuses and shortcomings in the functionings of the laws could be corrected by better administration and enforcement.

But the Board pointed out that the intent of the proposed change is broader than a mere correction of shortcomings. It said the change is to provide a more flexible law and give greater latitude to private enterprise in choosing the means and methods it employs in discovering and developing mineral resources on public lands.

Canada

(From Our Own Correspondent)

Montreal, December 15.

Not a little consternation was caused in circles associated with the Canadian gold mining industry when Frank Coe, Secretary of the International Monetary Fund, resigned his post under pressure of accusations of having been a Communist spy. Coe was called before the Senate subcommittee a few days ago for investigation. The State Department had already placed him under suspicion and had refused to grant him a passport on the ground that he was a bad security risk. When called before the subcommittee, Coe refused to say whether he had been a Soviet agent during the war. Because of this he was promptly dismissed.

CONSIDERATIONS OF THE I.M.F.

Developments such as this have given rise to suspicions that "deviation" may have existed in the very roots of the International Monetary Fund. It is remembered that Frank Coe, the accused Communist, not only helped to organize the Fund, but became its secretary at $15,500 a year (tax free) and despite early suspicions, he was able to hold the job until a few days ago. The thought is being expressed here that if Communistic influence existed at the outset of the I.M.F. this may have caused the havoc which has been caused to the gold producing industry of the Free nations. For these reasons, one of the main tasks of the incoming Eisenhower government at Washington, may well be an entirely new appraisal of the I.M.F.

CASE FOR INCREASED GOLD PRICE

There can be no doubt but that the I.M.F. and the tenacity with which the gold producers have been denied an increase in the price of their product has stifled and dwarfed the output of gold. Had gold been permitted to rise in price in keeping with the change which has come about in the economic structure of the leading nations of the world, there can be no doubt but that production of the metal would be far above the present rate—a continuously rising bulwark in the job of gearing free nations for defence. It is true that President Truman and Mr. Snyder, Secretary of the Treasury, have said there will be "no tinkering" with the price of gold. However, that merely expresses the opinion of an outgoing regime. In fact, opposition to that opinion probably figured in the election of Mr. Eisenhower who is a staunch advocate of sound currency and with profound faith in gold.

Certainly, there will be a search for other "Coes" in the fabric of the International Monetary Fund and a search for any hidden reasons which may exist in a planned subjugation of the gold production of the Free World, and a resulting sabotage of sound currency so badly needed to defeat the aims of the Communists. A belief exists that a higher price for gold would result in a very large increase in gold production—and that an increase in gold output would stimulate a marked increase in world trade. And if trade is to replace aid, an increasing flow of gold might well prove to be a vital contribution toward achievement of such an end.

New and speculative enterprises in Canada are expected to benefit from proposals made by the Security Exchange Commission of the United States under which in "regulation D" such undertakings would receive conditional exemption from registration for share offerings not exceeding $300,000 in any one year. The S. E. C. Chairman, Mr. Donald C. Cook, is due back in Washington from Europe before the end of this year, and the new proposal is expected to be dealt with early in 1953.

Another extensive iron range has been discovered in Labrador. This time, the discovery lies at Tidewater in the extreme northerly reaches of the territory. Preliminary estimates of indicated tonnage may exceed what was formerly brought to light in Quebec and Labrador. The one major difference is that the new discovery is medium to low grade and will therefore entail more serious problems in bringing the deposit into full utilization. Cyrus Eaton and associates have played the leading role in the discovery and preliminary tests. The Eaton deposit is situated near Hopes Advance Bay on the west side of Ungava Bay. The scene of the discovery is about 400 miles north of the high grade deposits now under deevlopment in Labrador and Quebec. Situated at Tidewater, the new Ungava Bay field might well be made a tributary to the blast furnaces of England.

UNUSUALLY RICH ORE BODY AT YELLOWKNIFE

An ore body of unusual richness is being revealed at the 750-ft. level of Giant Yellowknife Gold Mines in Canada's North-west Territories. At the time of writing, a drift has been extended 240 ft. in length along the deposit and has disclosed an average of more than three oz. of gold to the ton across the drift width of eight ft. The full width of the vein is estimated to be approximately 20 ft. The mill is treating 700 tons of ore daily. The output during November was $630,993, or an average of about $30 per ton. Compared with this, the new high grade ore shoot carries approximately $100 per ton, a fact which may be expected to reflect itself in due time upon average grade going to the mill. Still another mine in the North-west Territories is encountering unusually rich ore—although on a somewhat smaller scale of operation. This has reference to Consolidated Discovery at which property a total of 2,588 tons milled during November produced 3,348 oz. of gold for an average mill head of $46.55 per ton. And while these rich developments are of importance to holders of shares in the operating companies, they are also of incalculable benefit to Canada as a whole for the reason that they tend to attract men and money toward the task of pioneering in virgin areas of this country which might otherwise lie dormant and be of no national value.

COPPER-NICKEL IN THE YUKON

Hudson Bay Mining & Smelting Co. is conducting a detailed and extensive exploration programme on a nickel-copper deposit in the Yukon. The deposit is 48 ft. in width. In places the ore carries 3.2 per cent nickel, 2.2 per cent copper together with small values in platinum and cobalt. The company has acquired territory embraced in a length of about 18 miles and a width of three miles. Frigid weather has caujsed diamond drilling to stop for the winter, but will be resumed in May. Exploration will continue for possibly two more years before arriving at a decision as to development and production. The outcome may well depend upon the outcome of hydro-electric power development envisaged in an American plant to divert the waters of the Yukon through the Rocky Mountains in connection with a vast aluminium works in the Alaskan Panhandle. So far, the Canadian Government has withheld permission for such diversion. The new aluminium project will operate in competition with another aluminium plant in British Columbia in which Canada itself has a big stake.

Notice of the proposal of the Aluminum Co. of America to establish an aluminium smelter in the Taiya Valley district, near Skagway, Alaska, was contained in *The Mining Journal* of October 31, 1952. While final plans have not been completed, a construction programme planned in two phases is contemplated. These will comprise two units which together will cost $700,000,000 and will have an annual productive capacity of 800,000 s.tons.

World Zinc Situation

By S. D. STRAUSS

Although this review of the zinc industry was originally presented by the author, who is Vice-President of the American Smelting and Refining Co., to the American Zinc Institute some months ago, the full text of the Paper has only recently become available in this country and we believe it will be of considerable interest to readers in this country at a time when free dealings in zinc are about to be resumed on the London Metal Exchange.

In 1952, for the first time since 1946, world mine production of zinc in the form of ores and concentrates will exceed the consumption of mine product by zinc smelters, oxide plants, and other users of primary zinc-bearing raw materials.

Most published data are not accurate comparisons between mine production and smelter production, overlooking the tonnage of zinc that is produced by the mine and goes into consumption without going through a smelter. I have attempted to make the comparison accurate by eliminating from the smelter side of the ledger any secondary zinc, and the following figures are as nearly comparable as can be made.

A SURVEY OF PRODUCTION

The current estimate is that the recoverable zinc content of mine production this year in the areas outside the Iron Curtain countries will amount to 2,418,000 s.tons of zinc. As against this, the actual production of metallic zinc plus the zinc content of oxides and other similar products is estimated at 2,300,000 tons. This is a significant reversal in the position that has prevailed over the last six years during which there has been a steady reduction in stocks of concentrates held by zinc smelters and zinc oxide producers. When the mine product figure is higher than the smelter or consumption figure, then we have accumulation of concentrates. When the smelter figure is higher than the mine figure, then we have drawn down on concentrates.

Zinc smelter capacity is being expanded, but high capital cost and the delays involved in construction have retarded the rate of expansion as compared with the more rapid increases which are being made effective in the mining of zinc-bearing ores.

It is not possible to predict how long the surplus of mine production over metallurgical requirements will continue. In part, the answer will depend on the willingness of the zinc smelters and oxide producers to rebuild their stocks of concentrates which were substantially depleted during the last five years. It is estimated that in the United States alone, between the end of 1946 and the end of 1951 the zinc content of stocks of concentrates held at zinc smelters was reduced by 280,000 tons. We all know that title to a large portion of that tonnage was held by the United States Government. The reduction of those stocks was accomplished through contracts which the government made with various zinc smelters. As a result, the zinc went into the stockpile and the zinc industry for the last five years has been living on its fat to some extent. Regardless of who owned the concentrates, the fact is that smelters were smelting zinc at a faster rate than it was being mined. To-day, zinc is being mined at a faster rate than it is being smelted.

Further, it is my opinion that the zinc smelting capacity is fully utilized not only in the United States but in the world as a whole. There is no effective, modern zinc smelting capacity standing idle. With mine production continuing to increase and with smelting capacity increasing rather slowly, I think we are in for a considerable period of concentrate accumulation—unless something should happen to the price which would change the trend of mine production. That is one significant factor in the zinc picture.

AN ANALYSIS OF THE FOREIGN MARKET

The second one is an analysis of the foreign market to see what really makes the wheels go around. Of the seventeen countries in the Western World that produce slab zinc, only six at present are producing zinc in sufficient quantities to create a net export surplus. These six countries are Canada, Belgium, Mexico, Australia, Norway and Rhodesia. Their aggregate production is currently at the rate of about 660,000 s.tons of zinc metal a year and their aggregate home consumption is approximately 210,000 tons a year, so that these countries have an export surplus of 450,000 tons. This surplus must satisfy the import requirements of the major industrial areas of the Western World including the United States, the United Kingdom, France, Germany, Sweden, Switzerland, India, and other major industrial areas.

There are many, many countries with zinc smelting industries, but at present only six that have export tonnages available for sale. Most of the large consuming countries that I have just named have a domestic zinc smelting industry and when their zinc demands decline, they utilize their own product first and reduce the level of imports; when their requirements expand, they draw to an increasing extent on the production of the six exporting countries enumerated above. The aggregate export surplus of these six countries is less than 20 per cent of the current world smelter production which is running at the rate of about 2,150,000 tons a year—lower than the 2,300,000 tons earlier referred to, and the difference is the production of oxide plants and other consumers of zinc concentrates.

Two new names will be added to the list of net exporters of zinc metal in the next two years—Peru and the Belgian Congo. In fact, I believe Peru will be exporting quantities of zinc metal this year for the first time; for a long time it has been a large exporter of zinc concentrates.

A relatively small fluctuation in demand can set the tone of the entire market. Here we have less than 20 per cent of the world's production really entering into what we may call international trade, but it is this 20 per cent that really determines the course of the entire market.

The current easier tone in the world zinc market is due in part to currency difficulties and in part to the fact that production has been expanded to a substantial extent. World smelter production this year, 1952, will be about 6 per cent higher than in 1951; about 10 per cent higher than in 1950, and almost 25 per cent above the level of 1948 when the zinc market was in an extremely tight position. I think we can take some pride in the fact that the world zinc industry has increased its production by 25 per cent in a four-year period.

There is an unfortunate tendency by buyers and sellers alike to exaggerate the importance of the existing situation in the metal markets at any given time. A few months ago, the world position in zinc was judged so critical as to require establishment of an international allocation scheme; many forecasts were heard that the shortage would last for years and that all sorts of Government controls

would be necessary to insure fair distribution. It is less than a year, certainly, since I was asked to go to Washington to talk with some of the people in the Government who were concerned with the expansion of the zinc industry, and I was told we need feel no qualms about expanding our zinc supply because there was no possibility of meeting the demand for zinc ahead. It was only a case of how much of the deficit we could meet.

In a few months, this situation has changed. It is now apparent that, barring some unforeseen interruption to production, legitimate needs for zinc in the Western World can be met.

ZINC FUTURE UNPREDICTABLE

However, simply because the market is temporarily in an easier position, it would be equally a mistake to conclude that we are in for a period of substantial accumulation of large surpluses of zinc metal. The fact is that we cannot predict the future course of the market with any accuracy. What we can say is that our industry is in a position to increase production still further and that the extent of the new zinc resources that have been developed in the world within the past two or three years—not only in the United States, but also in Canada, Mexico, Peru, and Africa—clearly demonstrates our ability to fill the expanding zinc requirements of a growing population and a rising standard of living.

In the appended chart, I want to make clear that, although I captioned it "World Mine Production," I have excluded the Iron Curtain areas both on the mine side and the smelter side. To-day there is no substantial traffic between the Western World and the Iron Curtain countries in the form of zinc concentrates, which is the only thing that would affect the chart.

The actual deficit in the 1947-1951 period is more than the surplus in the five years 1943-1946 plus 1952. Even with the surplus we expect this year the stock of concentrates available to the smelting industry and the zinc oxide producers at the end of 1952 will be only what it was in 1943.

MINE AND SMELTER PRODUCTION IN 1952

Now for the figures for 1952. The mine figure I have set down for the United States is 700,000 s.tons. I would judge that this figure, 700,000 tons, which represents an increase of only 21,000 tons over 1951, may be a little on the low side. If that is so, then the surplus of concentrates in 1952 may be greater than estimated.

For the rest of North America, principally Mexico and Canada, I have estimated mine production in 1952 at 670,000 s.tons, an increase of almost 100,000 tons over 1951. The bulk of the rise is in Canada. There will be a lesser increase in Mexico, reflecting construction of new slag fuming facilities.

For South America, mine production in 1952 is estimated at 200,000 tons as against 156,000 in 1951. The bulk of this increase will be in Peru where production is developing very rapidly.

European mine production for 1952 is estimated at 360,000 s.tons as against 318,000 in 1951. Since we do not have much direct contact with some of the European mine producers, these figures are taken from figures submitted to the International Materials Conference and used in its studies.

We estimate African production for 1952 at 220,000 net recoverable s.tons as against 200,000 tons in 1951. That is a modest increase of only 10 per cent. Looking ahead over the years, I think it is fair to guess that African production will increase more rapidly than from any other single area. Whether it will increase sharply this year is a question.

In Australia the situation is virtually unchanged, 198,000 tons as against 193,000 tons. This is also true of Asia, which is primarily the production in Japan, 70,000 tons against 67,000 tons.

The total is 2,418,000 tons for 1952 against 2,179,000 tons in 1951. The increases will be first in North America, principally Canada; next in South America; and then in Europe and Africa, with only a modest increase in the United States and no change in Australia and Asia.

On the smelter side, we put domestic zinc production at 930,000 tons which compares with 886,000 last year. The first quarter figures of the American Zinc Institute bear out the fact that the domestic smelting industry is back to the highest level since 1943. The 1943 production was 942,000 tons—and here again, I emphasize that I have excluded all secondary production.

For all practical purposes, so far as we know, output now represents the present capacity of the domestic smelters. Some increase in zinc smelting capacity will come into play next year. The Corpus Christi plant will be expanded 20,000 tons a year, and there are some other changes being made.

For other North American smelters, the estimate is 300,000 tons in 1952 against 269,000 in 1951, and that is an increase in Canada. There is no change in the zinc smelting capacity in Mexico. In addition to the current expansion by the Consolidated Mining and Smelting Co, there are plans afoot for construction of new smelting facilities in eastern Canada. Thus, the tendency will be for mine production to accumulate.

South American production is figured at 22,000 tons in

WORLD MINE AND PRIMARY SMELTER PRODUCTION OF ZINC

(All figures in thousands of s.tons)	1943		1944		1945		1946		1947		1948		1949		1950		1951		1952 *Est.*	
	M	*S*	*M*	*S*	*M*	*S*	*M*	*S*	*M*	*S*	*M*	*S*	*M*	*S*	*M*	*S*	*M*	*S*	*M*	*S*
United States.....	744	942	719	869	614	765	575	728	638	802	630	788	593	815	618	848	679	886	700	930
Other N. America	555	261	517	220	517	237	449	239	417	231	427	252	470	264	502	258	506	277	640	300
South America ...	65	2	87	3	90	3	88	3	84	4	90	3	99	4	105	4	144	9	200	22
Europe	300	440	200	370	95	147	158	290	200	400	224	475	274	554	300	654	318	705	360	718
Africa	39	15	34	16	45	19	61	19	73	24	115	25	142	26	182	25	200	23	220	25
Australia.....	159	86	151	88	130	94	151	85	160	78	167	92	169	91	186	95	193	90	198	90
Asia.....	108	74	85	68	27	33	25	13	33	17	37	24	49	35	54	59	67	65	70	66
Total	1,970	1,820	1,793	1,634	1,518	1,298	1,507	1,377	1,605	1,556	1,690	1,659	1,796	1,789	1,947	1,943	2,107	2,055	2,388	2,151
*Plus.....		128		155		144		148		160		146		103		149		140		151
Adjusted Totals	1,970	1,948	1,793	1,789	1,518	1,442	1,507	1,525	1,605	1,716	1,690	1,805	1,796	1,892	1,947	2,092	2,107	2,195	2,388	2,302

*Zinc content of zinc oxide, lithopone, zinc coatings and zinc sulphate produced from ores and concentrates.

To show a proper balance, there has been added to world smelter production the estimated recoverable zinc content of concentrates used for the production of zinc oxide, lithopone, zinc coatings and zinc sulphate. The bulk of this consumption of zinc concentrates by others than zinc smelters occurs in the United States.

1952 as against 9,000 tons in 1951. The Cerro de Pasco Co. is installing a new zinc electrolytic unit which, I think, will be fully effective in the latter half of this year and further expansion is planned. Eventually, it seems likely that South American smelting capacity will be considerably increased; but that also is a matter of several years, probably four or five years before all of the Cerro de Pasco Co. plans have been matured.

European zinc smelting production this year is estimated at 718,000 tons as against 705,000 tons in 1951. Substantially no change is in prospect and I know of no major increase on the planning board for adding to the capacity of European zinc smelters. There is one small new plant being constructed in northern Italy. Other than that, the existing zinc smelters are going along on the basis on which they have been running for the past two or three years.

In Africa, zinc smelting production in 1952 is estimated at 25,000 tons, all from the electrolytic plant in Rhodesia. There is a lot of talk of new smelting capacity in Africa. One plant is being built in the Belgian Congo with a capacity of 40,000 tons. It is due to be completed sometime next year or early 1954. In addition, there is talk of a new zinc smelter in North Africa and one in the Union of South Africa. Either of those two plants, if they are built, would not be available before 1954 or 1955 at the earliest.

We figure Australian smelter production at 90,000 tons, which is capacity and is the level at which they normally operate except when they have power troubles. The Asian production is estimated at 66,000 tons, all in Japan. This is the production rate at which they have operated for the past two or three years.

There is your picture of mine production and smelter production. The question is, what does it do to our price structure?

A close estimate can be made of the probable requirements for zinc in the domestic market in 1952. I wish it were possible to make a similar estimate of requirements abroad, but any figure I could draw up would be worth little or nothing. The currency situation, the disturbed political situation abroad, and the notorious tendency of foreign buyers to buy zinc based on what they consider to be the probable trend of the market price make it impossible to form estimates that have real validity.

CRITICISM OF PALEY VIEWPOINT

I do not hold at all with the theory prevalent in Washington that requirements for any metal can be projected for a long period of time ahead. I think in our own home market we can make a good estimate of what we may need for 12 months; but beyond that, anything is conjecture.

Therefore, I should like simply to close with the thought that the European, or rather the general level of consumption of zinc outside the United States in relation to the very rapidly growing population, is low. In the long run, this use of zinc is bound to increase; but whether it will increase as rapidly as mine production apparently is increasing at the present time is a moot question. We may be in for a period, as I have indicated, of accumulating surpluses of concentrates for a time; but the day will come when the currency difficulties will be solved and political difficulties will disappear—and basically, in the consumption of metals, the factor that determines the level of consumption is what people need. Sooner or later the European market, which at present is quiet, will come back to life.

Fifty Years of Tin Mining at Tronoh, Malaya

This year Tronoh Mines Ltd. holds its fiftieth annual general meeting. The following article, condensed from a pamphlet entitled *Fifty Years of Tin Mining in Malaya* and published by the company, presents a brief review of its history and indicates the changes seen in Malayan tin mining practice during the past half century. It closes by noting those British firms which have aided the company by the supply of effective equipment.

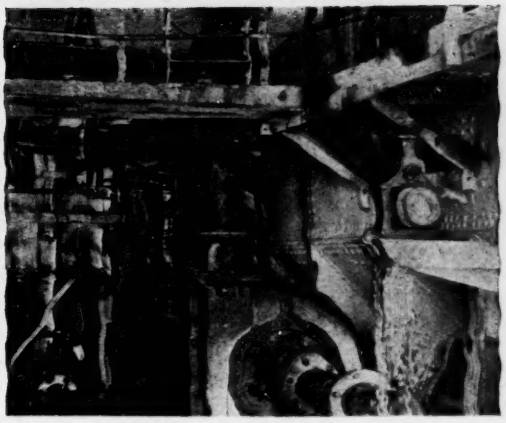
Mining has been carried out in the Tronoh district of the State of Perak for many years, but not until 1897 was a deep layer of tin bearing gravel discovered. The entire deposit lay in a previous large river bed, which had been silted up by material brought down from higher country, the action eventually turning the river into another channel. This layer of tin bearing gravel could be traced for fifteen miles in the Kinta Valley from Tronoh to Ipoh.

The first inclined shaft sunk reached a level of 200 ft. vertical depth below surface without registering any sign of bedrock, but by 1901 the ground was being worked by opencast and underground methods. In 1915 a bucket dredge which could operate economically in lower grade ground began work with a monthly capacity of 90,000 cu. yd. A second dredge which had been built earlier to deal with tailings to a depth of 15 ft. was enlarged and put into production, and a third dredge costing £80,000 began work in 1921.

Three Dredges at Kampar Section

Five years later a new property was acquired in the Tanjong Tualang district (Kampar) and two dredges were ordered as its equipment. In the following year a new company, Southern Tronoh Tin Dredging Ltd., was formed to take over part of this new area, and in the meantime the tailings dredge had been sold. In 1930 the whole superstructure of No. 3 Dredge was transferred *en bloc* from a wooden pontoon to a new steel pontoon and in 1931 another new, electrically driven dredge was completed on the Kampar property but could not be worked until four years later. The second dredge was sold in 1937 after seventeen years' work, and the third dredge was dismantled in 1939 and was

Ore washing in the dressing shed by means of a Willoughby Jig operated by water pressure. Excess water passes in a stream while the tin ore is drawn through the hutch



The jigs on the dredge operate on a similar process to the Willoughby. Above, the secondary jigs treat again the concentrates from the primary jigs

transferred to Siam to work on the property of Tin Lay Ltd., a new subsidiary company. Also in 1939, a new large capacity dredge was completed in Tronoh for £160,000.

During the Japanese occupation very large quantities of tin ore were extracted from the properties and in consequence ore reserves were seriously depleted.

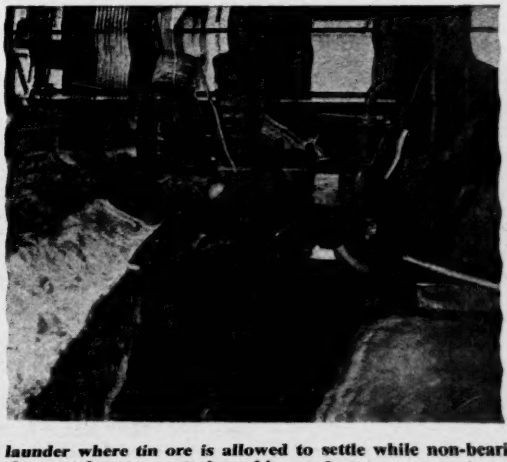
While the method utilized in exploiting alluvial tin bearing ground by means of an endless chain of buckets remains basically the same, the main developments in dredging practice have been seen in a much increased bucket capacity, an increased efficiency in the driving machinery, the attainment of greater depths, and in the system of treating the raised spoil. Tronoh dredges are destined to reach a maximum depth of 80 ft. below water level, as this is the greatest depth of known tin bearing ground, although on some Malayan properties the deposit is known to lie at depths of up to 130 ft. below surface. It is likely that the considerable size and cost of a bucket dredge to reach much greater depths would render such units uneconomical, but with its associated companies, Tronoh is experimenting to develop means of reaching greater depths. The bucket capacity on Tronoh's newest dredge is 18 cu. ft. These dig at 22 per minute, with a normal total digging capacity of 350,000 cu. yd. of ground per month.

Additional developments have been that although in some types of ground the separation of tin ore from spoil by means of washing over riffle tables still operates satisfactorily, in some appropriate cases this system has now been replaced by jigs. It is perhaps in this field of ground treatment that the most radical changes have been seen, the operation takes place on the dredge, and an ample circulation of clean water is vital.

Staggering alterations in the values of ground worked in the area have been recorded since the early days of this century. In 1906 the average tin ore content of a cu. yd. of ground dug up in the Tronoh workings was 24.3 catties (32.4 lb.) and in 1911 the average was 14.1 catties (18.8 lb.) per cu. yd. In 1951 the average tin ore content of the ground worked was 0.42 catty (0.56 lb.) per cu. yd. The efficiency of the modern dredges used, as well as the low operating costs attendant to their operation, are shown by the fact that it is now economical to mine ground carrying values of well under 0.5 catty per cu. yd.

Designers and manufacturers in Great Britain have contributed much to the overall effort in the evolution of modern dredging machinery. Messrs. F. W. Payne & Son, Consulting Dredge Engineers, have designed all of the company's dredges, while Messrs. A. E. Mohring & Son have been responsible for electrical installations. With other Sheffield firms, Messrs. Hadfields Ltd., have supplied manganese steel for buckets and other equipment, and many other British firms have played a part in providing dredge components. All have aided in providing machines which have shown a considerably longer life than was expected.

Oversize spoil being discharged at the lower end of the screen into the stone chute and thence over the stern of the dredge into the water



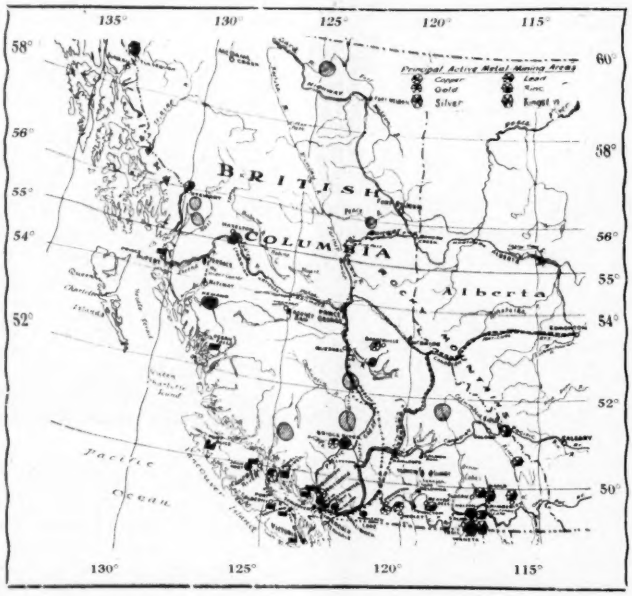
A launder where tin ore is allowed to settle while non-bearing sands are taken to waste by raking and water power. A more modern, mechanized shed is now being constructed

British Columbia's Mineral Deposits

Although the most easily accessible metal deposits in British Columbia have been developed, the vast cordilleran region stretching from that area to within the Yukon undoubtedly still holds much hidden wealth, and in addition the province has enormous water power resources. The following article, condensed from *Monthly Review* of The Bank of Nova Scotia, gives a resumé of the developments now taking place in the province.

British Columbia's mineral resources stand second to her forests in contribution to the value of the primary production of the province. The majority of Canadian lead output, nearly half her zinc and approximately one-third of her silver output, as well as appreciable quantities of copper and gold, are British Columbian products. With the notable exception of the gold mining industry, the metal mines of British Columbia have been enjoying favourable conditions, so that the search for new ore bodies has been greatly stimulated and old mining properties have been re-opened in widely scattered localities.

The increased price for tungsten has led to renewed production at two properties, and over a score of new concentrating plants have come into operation which individually are small but which *in toto* add a substantial amount to the milling capacity of the industry. The metallurgical plant at Trail which treats most of the lead and zinc concentrates produced in the province is being enlarged and modernized and a new by-product fertilizer plant is being built near Kimberley. The iron ore deposits on Vancouver and Texada Islands are at present being developed and ore is being shipped to Japan. In addition a deposit of high-quality asbestos is being opened up near McDame Creek in the extreme north-west, and the production of gypsum in the interior has increased sharply during recent years.



The principal active metal mining areas of British Columbia.

(Developed water power sites over 75,000 h.p. are represented by black circles, and undeveloped sites of varying capacities by shaded circles)

The most recent major development in connection with British Columbia's mineral resources is the assessment of natural gas reserves at some 1,600 billion cu. ft. in the Peace River area. These reserves, added to the 900 billion cu. ft. in the Alberta portion of the Peace River area, are considered sufficient to justify the construction of a pipeline through Pine Pass to Vancouver. The Alberta Government and the Board of Transport Commissioners have approved the project, but to make it economically feasible an additional market would have to be obtained in the Pacific North-West States, and an application for the entry of this gas into the United States is now before the U.S. Federal Power Commission.

In so far as oil is concerned, no oil is being produced commercially in British Columbia at the present time. Yet the discovery of oil at Fort St. John in late 1951 and the subsequent gas discoveries have resulted in exploration rights being taken out on some 35,000,000 acres in the north-eastern part of the province. Meanwhile the pipeline which will transport Alberta oil into British Columbia through the Yellowhead Pass is well advanced, and the arrival of this oil supply is anticipated late this year. In preparation for the establishment of this source, refinery capacity in the Vancouver area is being substantially expanded and it has recently been announced that the pipeline will be extended across the United States border and that a refinery will be built at Ferndale in Washington State.

With the exception of Quebec, British Columbia is more richly endowed with water power resources than any other province in Canada. Only a fraction of these resources, conservatively estimated at 11,000,000 h.p., has so far been developed, and it is fitting to remember that hydro-electric power has always exerted considerable influence in aiding the development of the British Columbian mining industry. Hydro-electric generating capacity in the province amounted to approximately 865,000 h.p. in 1945 and will soon reach 1,500,000 h.p. It is anticipated that projects now under construction will bring it to well over 2,000,000 h.p. during 1954.

A large part of the new capacity already in operation or soon to commence operations is designed to serve the expanded industrial, commercial and domestic needs of the Greater Vancouver area. At Bridge River, three 62,000 h.p. units of an eventual ten are now in operation and a fourth is to be installed this year, while of like interest is the 82,000 h.p. development at Wahleach Lake which is almost completed and which will have a "head" of 2,200 ft., the highest in N. America until Kitimat opens.

Yet the expansion of hydro-electric capacity has not been confined to this concentrated industrial area. Of three large projects, the John Hart development is being increased to 168,000 h.p.; the Waneta project on the Pend d'Oreille River near the southern border of the province will serve the new fertilizer plant at Kimberley and will add to the power supply for the metallurgical works at Trail already served by the development on the Kootenay River. The first two of the four projected 102,500 h.p. units of the Pend d'Oreille River project are expected to be in operation in 1954. The third hydro-electric development removed from the Greater Vancouver area is that at Kitimat, which has already been described in *The Mining Journal*, October 17, 1952 issue, page 430. The development of railways is progressing, for the extension of transportation facilities is crucial to the development of the mineral resources of the largely unknown north.

MACHINERY AND EQUIPMENT

A New Safey Shoe

A new design in safety shoes is said to provide reliable foot protection throughout the entire toe and instep region of the foot and to be superior to other current styles, according to a notice published in *American Shoemaking*. Many of the safety shoes currently produced involve merely a built-in metal box above the toe that is dome-like in shape, and which is localized in its effectiveness in that it protects only a smaller portion of the large toe area.

The new design, on the other hand, consists of a rearward extension of the metal toe cap at the outer side of the shoe. This constructional factor supplements the corner guard portion located at the inside of the shoe and an additional built-in instep guard provides adequate protection for the entire toe and instep area against injury from heavy weight pressure or falling objects.

A breakline is allowed between the toe and instep reinforcement to permit of the proper bending motion required for comfortable walking. This breakline coincides with the transverse curved line defined by the metatarso-phalangeal joints of a normal foot and thus is effective in design. In effect, the toe or box cap is entirely disposed in advance of the lateral flexing zone of the upper and the breakline of the sole, and is equipped with a transversely arched rear edge that is curved continuously and assymetrically towards the toe end of the shoe.

Such an arrangement permits the rear-edge to be parallel to, and in advance of, the transverse curved line determined by the metatarso-phalangeal joints of the foot. In addition, the rear edge thus completely overlies the toe area. In this manner therefore, the new metal box toe is allowed the maximum dimension without any limitation or restriction on the flexibility of the shoe.

The only exposed area is the small gap between the toe cap and the instep protector. Thus the shoe is vulnerable solely to pointed objects which may strike at that exact spot.

The efficient design of protective footwear is progressing to meet the demands of industry, and it is a salient point that comfort in walking and wearing is a vital factor in the construction of efficient safety equipment of all types.

An Abrasion Resisting Alloy For Mining Equipment

An interesting pamphlet produced by Follsain-Wycliffe Foundries Ltd. gives details of the manufacturer's C.Y. abrasion resisting alloy. The C.Y. is an alloy cast iron subjected to heat treatment, and is presented as being consistent throughout, not excessively hard but relatively strong. This combination of characteristics gives a long wear resistance and if a section is of solid type, the alloy will withstand considerable shock owing to its tensile strength. In addition, its abrasion-resisting qualities are suggested as important factors where a rubbing motion must be considered. Such applications, for example, would be in the construction of chute plates, scrapers and like equipments.

Physical properties show an ultimate tensile strength of 30/35 tons per sq. in., a Brinell hardness of 250-475, a specific gravity of 7.6 and a weight per cu. in. of 0.28 lb. The alloy finds many applications in the mining and quarrying industries, and typical installations at collieries are as haulage surge wheel pads, segments or trods; rope, corner or midway rollers; pump impellers, conveyor spirals, coke chute liner plates, washery plates, as well as brake blocks for surface and underground locomotives. In quarries and gravel pits the alloy is used in the construction of toggle plates for jaw type crushers, chute liner plates, elevator guides and skid bars, as well as for breaker bars and liner plates.

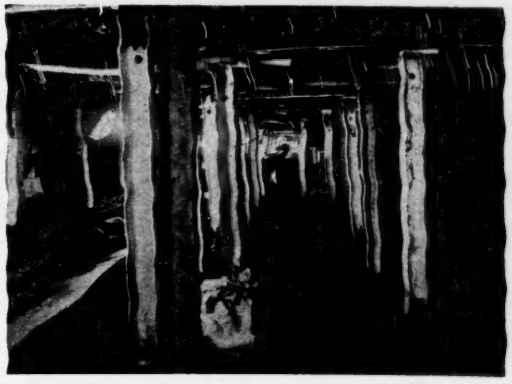
In the manufacture and installation of haulage surge wheel pads, apart from the heavy expenditure arising from frequent replacements, unsuitable pads often cause plucking owing to the rope wearing grooves. C.Y. alloy pads are presented as having prevented this plucking in many cases, as their high resistance to wear minimizes the tendency of the rope to dwell at one level in its transit across the face of the segment. For similar considerations, the alloy is finding application as a medium for the construction of rope rollers and sheaves.

In quarries, gravel pits and industries engaged in crushing the more abrasive materials such as silica, basalt or flint, C.Y. alloy breaker bars and liner plates are finding an application. An advantage of lining chutes with these alloy plates is said to be that once local wear takes place, the worn plate may be replaced by a similar plate with the countersunk holes cast in.

Coal Face Lighting Fittings

The first of a number of installations using the new fittings developed by the General Electric Co., Ltd., for coalface lighting with tungsten lamps, was completed recently at Birch Coppice colliery in the Midland Division of the National Coal Board.

Combining portability with low surface brightness from a tungsten light source, these fittings are made flameproof by the use of a thick armour-plate front glass, while an additional domed front cover of high-transmission opal "Perspex" provides diffusion and extra mechanical protection. The resulting maximum brightness is less than that of a fluorescent tube.



Coal-face lighting by G.E.C. flameproof tungsten fittings at Birch Coppice Colliery

These fittings are supplied complete with two flameproof half-couplers integral with the unit, and are stated to be smaller and more economical than fluorescent fittings.

On a double unit face at Birch Coppice, twenty tungsten fittings are installed on the left-hand side and eigteeen on the right, with 8 ft. spacing at a mounting height of 4 ft. 3 in.

Steel Tube Economizers

The fundamental principle of the economizer is that in low pressure steam generating plant the unit saves fuel by transmitting to the feed water, heat recovered from the flue gases after they have left the boiler. In high pressure steam generating plant the operating principle is the same, but emphasis is laid on overall thermal efficiency rather than on fuel saving.

In a well produced pamphlet E. Green & Son Ltd., present their steel tube economizers, and note that several advantages may be gained from the use of steel tubes protected by cast-iron gilled sleeves firmly shrunk in position. By this means the resistance properties of high grade cast iron to corrosion and erosion can be exploited, and in addition the heat absorption capacity per unit length of tube is considerably increased. It is finally suggested that an economy in space and materials results from the use of steel tubes for this purpose.

Many considerations have influenced the design of the firm's economizers in the development of the Premier Diamond design of gilled sleeve. The Premier Diamond is produced in Types 8 and 12, and is said to produce good results with pulverized fuel. In the Interdigitated Coil economizer the design is suited to upward gas flow, and its principal feature lies in the suspension of the tube coils whereby the weight is taken on cross members above the coils. The Greensteel Plain Tube economizer provides the orthodox arrangement of unit with downward gas flow outside the boiler.

METALS, MINERALS AND ALLOYS

COPPER.—The U.S. copper industry received a definite turn-down from the O.P.S. just before Christmas to the appeals which it has made for the raising or suspension of price ceilings on domestic copper. In announcing this decision, the price stabilizer, Mr. di Salle, is reported as saying that in view of the continued critical shortage of this basic defence metal the suspension of ceilings was out of the question. Beyond this he pointed to the favourable current earnings of the industry as justification for making no increase in ceiling prices. The industry will, presumably, return to the attack once the new Administration is in being.

N.P.A. January allocations to domestic users show an increase at 121,000 s.tons of 5,000 tons over the "preliminary" December allocation. There was, however, a supplementary allocation in December of 12,000 and a supplementary allocation for January is similarly anticipated once the extent of foreign January deliveries are known. The D.P.A.'s recent statement on civilian copper availability in the second quarter of 1953 makes it clear, however, that no rapid easement of the supply position is anticipated This statement indicated that the second quarter civilian quota would remain unchanged at 50 per cent of the pre-Korean base usage, although civilian requests for second quarter copper were estimated at about 140 per cent of the available supply.

A stoppage occurred at the El Teniente copper mine in Chile on December 29 involving over 6,000 workers. As we go to press, there has been no news of return to work. The mine is operated by the Kennecott subsidiary, the Braden Copper Co. and on Thursday of last week workers at Anaconda's Potrerillos mine staged a 24 hour stoppage in sympathy with the El Teniente strikers. Negotiations over wages and other matters have been in progress at the El Teniente mine for some time.

Plans have been announced for working copper deposits in Mauretania. A company is to be formed with a capital of Frs.600,000,000 to be known as the Société de Mines du Cuivre de Mauretanie. Half the capital is to be subscribed by State agencies and the remainder by private investment. The formation of the company is planned to take place early in 1953 and it is expected that production will initially be of the order of 20,000 tons of copper per annum.

A smelter will shortly be completed at the Home of Bullion mine, 180 miles north of Alice Springs in Australia's Northern Territory. The smelter is designed to handle the many low grade deposits existing in the Territory which cannot at present be profitably worked owing to their distance from existing smelters. At present prices only copper ores averaging better than 15 per cent can economically be shipped to the south.

Arbitration proceedings in the copperbelt dispute are expected to begin in about three weeks' time. Reports from Salisbury suggest that Sir Hartley Shawcross may be briefed to represent the copper companies and that Mr. Ronald Williams, M.P., who is legal adviser to the National Union of Mineworkers, is expected to represent the African Mineworkers' Union. The arbitrator will be Mr. C. W. Guillebaud, the Cambridge economist, who will be assisted by assessors nominated by both sides.

LEAD.—There seems little reason to think that the extent of the rise in the lead price over the last fortnight (which advanced from around £96 10s. on December 18 up to as high as £108 on Tuesday of this week) reflects any substantial change in the demand situation any more than did the heavy fall when Metal Exchange dealings re-opened in the Autumn. As our Metal Exchange correspondent points out, the present tightness of prompt metal is largely of a technical nature due to a considerable amount of short-covering which has taken place recently.

The lead price in the U.S. and elsewhere has been rising in sympathy with the London quotation, the spot New York price now being 14½c. per lb.

TIN.—The M.P.A. has announced the removal of domestic allocation controls over pig-tin, with effect from the beginning of this year in view of "an improvement in the U.S. tin position," although the restriction to 90 per cent of base period usage is to continue for the present. Secondary tin mill products were removed from the list of controlled materials with effect from December 24. Controls on civilian uses of tin have been an important contributory factor in the low level of American consumption in recent years, and consequently in the gap between world supply and demand, which in 1952 may be as much as 40,000 tons although the apparent excess may well be negligible as a result of stockpiling operations.

The R.F.C. director is reported to have stated recently that the Corporation was making progress towards "getting out of the tin business," and indicated that the Corporation might within the next 12 months, cease buying and selling for the national stockpile. It is not clear from this report whether this statement is to be taken as suggesting that tin stockpile purchases will be completed by the end of 1953 or merely that in due course the G.S.A. will conduct its purchases through private traders.

The U.S. State Department recently issued a statement clarifying its position *vis-a-vis* the Bolivian tin negotiations. The statement made it clear that the R.F.C. has made several spot purchases of Bolivian tin since the April revolution, the last of which occurred in September. Since that date the Bolivian Government has made no further offers of spot metal. On several occasions the U.S. has informed the Bolivian Government that the R.F.C. is prepared to consider offers on substantially the same basis as in earlier purchase agreements and at no time has the U.S. refused to buy Bolivian tin. The statement further revealed the Bolivian Ambassador in Washington has intimated that his Government wished to conclude a one-year contract for the sale of Bolivian tin concentrates. The feasibility of such an arrangement is at present being considered.

ZINC.—At a pre-Christmas Press conference, Mr. Larson, the D.M.P.A. Administrator, took a bullish view of the prospects for zinc. Looking beyond the period immediately following resumption of free dealings in London, during which he was prepared for a further price fall, he took the view that "the requirements on the long range programme would preclude a continuance of the present plentiful supply. Since 50-60 per cent of the domestic mines have either closed down or are in the process of closing, the present 12½c. price may be expected to rise, even though British zinc may force the present price down even lower for a short time." In fact Continental free zinc prices have been showing a steadier tone recently and earlier this week good ordinary brand was selling f.o.b. Antwerp at up to £89 per ton and it may well be that thanks to the recent improved tone in lead, zinc dealings on the Metal Exchange may open to-day at a somewhat higher figure than seemed probable a few weeks ago.

The U.S. galvanizing trade has been breaking records this autumn in an attempt to catch up the leeway lost during the steel strike and in October shipments reached the all-time high at 219,883 tons. Nevertheless, owing to the heavy output losses in June and July shipments for the year seemed certain to fall short of the 1951 figure of 1,985,000 s.tons.

ALUMINIUM.—The usual spate of year-end reviews of the industry reaching us from across the Atlantic indicates that despite the serious curtailment in U.S. production this autumn, due to power shortages, U.S. primary production for the year is likely to establish an all-time record at 930,000 s.tons compared with 837,000 s.tons in 1951 while Canadian output will be little short of 500,000 tons against 469,000 tons. Mr. Richard Reynolds, Jnr., seems to be expressing the majority viewpoint when he says that "with the industry continuing to expand its capacity at a record pace, the supply situation should be much easier in 1953 than at any time since the Korean war started."

The Harvest Machine Co. of California has become the second new entrant into the U.S. industry under the Administration's "third round" of primary aluminium expansion. It will be recalled that Olin Industries, of Illinois, were also reported to be entering the field with a projected capacity of 110,000 tons which leaves a further 36,000 tons out of the "third round" expansion programme of 200,000 tons still to

be provided for. Both the Harvest and Olin companies have been granted rapid amortization certificates covering the fixed assets involved in the programme.

The Aluminum Co. of America has rejected the Government's offered price increase of ½c. per lb. in primary pig and ingot aluminium and 4 per cent in fabricated products in return for which aluminium companies would cancel certain clauses in their contracts to supply aluminium to the Government. Alcoa reiterated that it wants a one cent-per-lb. increase in primary aluminium and 5 per cent in frabricated products.

The current contract between the Ministry of Materials and the British Aluminium Co. expired at the end of 1952 and it has now been decided to discontinue the arrangement under which the Ministry buys British Aluminium's output for re-sale to consumers. British Aluminium produces about 30,000 tons of virgin metal per annum and most of this will be used in the company's own works although the company has agreed to continue to supply other special purpose users at prices not exceeding the Ministry's current price for imported aluminium. Such sales will be licensed in the usual way.

CHROME.—Export of Turkish chrome is reported to be playing an increasingly important part in that country's economy. Production of chromite is currently running at the equivalent of an annual rate of 550,000 l.tons of crude ore. Five years ago Turkish output of chrome ore was a little under 200,000 l.tons with a Cr_2O_3 content of 80,000 l.tons.

COBALT.—As a result of the improvement in the cobalt supply position, the I.M.C. has decided to dispense with allocation of this metal in the first quarter of 1953. The position is, however, being kept under review.

MANGANESE.—The D.M.P.A. is negotiating with several Mexican mining companies to ensure the production of enough manganese ore to warrant the erection of a concentrator at El Paso. The Agency aims to place contracts for 500,000 tons of low-grade ore.

A Franco-American company, in which the U.S. Steel Corporation has a majority interest, is to be formed to search for and develop manganese deposits in Gabon (French Equatorial Africa). If preliminary investigations prove satisfactory it is expected that the initiation of mining operations may require capital amounting to 2,000,000,000 francs. The scheme is still subject to approval by the French Government.

Work is to be begun this year on the construction of a managanese separator at the Zletovo Mine in Macedonia. The plant, which is scheduled to have an annual capacity of 24,000 tons of manganese concentrate, is expected to be ready in 1954.

MOLYBDENUM.—In its year-end report the I.M.C. states that molybdenum continues to be in very short supply, the free world production in the first quarter of 1953 being estimated at 6,408 tonnes, an increase of 13 per cent over estimated production for the last quarter of 1952 and of more than 75 per cent over the rate in 1950. Defence and stockpiling requirements are, however, still much in excess of these estimates and the committee urges that every attention should be given to its recommendations for conservation and substitution. Allocations for the first quarter of 1953 total 6,408 tonnes of which the U.S. will receive 4,999 tonnes the U.K. 540, France 355 and Germany 321.

NICKEL.—Mr. Larson remarked recently in connection with a review of D.P.A. metal programmes for 1953 that the price of nickel would have to go above its present ceiling, if the U.S. was to get as much of the metal as it needed. Since then the International Nickel Co. has indicated to Washington that it would like to raise its price by 3½c. per lb. In arguing its case with the O.P.S., International Metal has pointed to the recent weakening of the American dollar in relation to Canadian currency as justification for this increase. The American nickel price was last increased by 6c. to 56½c. in 1951.

Mr. Larson also revealed, in the statement already quoted, that the D.M.P.A. is preparing plans to increase production by 15 per cent at the Nicaro Mine in Cuba. (See our leading Note and Comment last week.)

I.M.C. nickel allocations for the first quarter of 1953 total 37,272 tonnes, of which 25,013 tonnes have been allotted to the States and 5,433 tonnes to the U.K.

PHOSPHATES.—The Government of Southern Rhodesia has granted an option to African Explosives and Chemical Industries—jointly owned by I.C.I. and De Beers—to develop the Dorowa phosphate deposits in the Sabi Valley, about 50 miles west of Umtali. This is a long term project involving among other things construction of 50 miles of new railway line to link the mine with the existing Umtali-Salisbury route.

QUICKSILVER.—The U.S. price has hardened further in the past fortnight and now stands at $217-220 per flask.

Yugoslavia is reported to have exported 400 tons during the first nine months of 1952, of which 260 tons went to the U.S.

THORIUM.—Production of thorium from the monazite beach sands of Travancore is reported to be well under way. The plant which processes the beach sands is being operated by Indian Rare Earths Ltd., a venture sponsored jointly by the Indian and Travancore-Cochin Governments.

TITANIUM.—Substantial deposits of titanium ore have been discovered near Baie Verte, White Bay, on the north-east coast of Newfoundland. This is revealed in a report by Mr. A. J. Wells, director of Rambler Mines, who is quoted as saying that concentrates worth $1,000 a ton have been found in large quantities in an area of 4 miles by 1½ miles and that a smelter is to be erected at a cost of $500,000. This discovery appears to be additional to other deposits known to exist in a mountain area in Western Newfoundland while further deposits were revealed by a survey this summer in the Mealy Mountain area.

TUNGSTEN.—As foreshadowed in this column three weeks ago, the I.M.C. has announced that it will not allocate tungsten after the end of 1952 because of the 50 per cent increase in Western production during the past 18 months. It has, however, been agreed that if two or more countries experience serious difficulties in obtaining supplies, the committee will consider reintroducing allocation.

The tungsten market continues to show a weakening tendency throughout the world with supply and demand being practically in balance. The Ministry of Materials buying price for 65 per cent grade ores was lowered this week to 370s. per l.ton unit c.i.f. U.K. for wolframite and 360s. for scheelite, compared with previous prices of 410s. and 400s. respectively. Although the Ministry's selling price has not been affected, the possibility of some future adjustment must not be ruled out.

DIAMONDS.—Continued hostilities in the Far East made 1952 favourable for speculation in diamonds and probably more so since the U.S.A. and Russia, with its satellites, were competing in buying in the open market states Johan J. Smit, Snr., in his December *Diamond Market Report*. Even so, black market prices on the Continent were, he said, approximately 25 per cent higher than prices on the open market.

Information on the salvage of industrial diamonds released by the U.S. Government in the middle of last year, together with the introduction of a regulation limiting the diamond wheel inventory of the end user to two month's supply, resulted in demand for diamond boart easing. On the other hand, he added, there was a continuous demand throughout the year for gem stones.

With regard to the industrial diamond market Mr. Smit stated that because of the world wide search for basic metals, coal, and for petroleum products, demand for drilling material had been good.

GOLD.—The Agent General for Western Australia has announced that during October 68,472 oz. of gold were received at the Royal Mint, Perth, valued at £848,600.

The London Metal Market

(From Our Metal Exchange Correspondent)

The tin market has remained steady since the last report but with a slight increase in the backwardation. Business has been patchy and there has been very little consumer demand. During 1952 the price has fluctuated very much less than in previous years, the high point being just over £1,000 per ton and the low point just above £900 per ton. It would therefore appear that a certain degree of stability has now been achieved, although the coming year may see higher prices if the R.F.C. retire from the tin business, as without that source of supply at a fixed price the American market should take more tin than it is doing at the moment; and with the situation in Malaya

still precluding the bringing into production of new areas, and the change of ownership of the Bolivian mines, the world output for next year may show some decline.

The Eastern price on Wednesday morning was equivalent to £956 per ton c.i.f. Europe. On Wednesday afternoon the London market was barely steady. On Thursday the market was closed.

The lead market is now in the middle of the second stage of its teething troubles, namely an unusually heavy demand for prompt and nearby metal brought about by the very much longer time for shipments to be made and for cargoes to be unloaded than had been the experience in pre-war days. To this technical position has now been added the strike at Port Pirie of which there is no prospect of an immediate settlement, and in any case it has been estimated that it will take about three weeks to get production going again after resumption of work, which may cause further delays in shipments of metal in satisfaction of existing contracts. The United States' producers have raised their price more or less in conformity with the London market, but demand is only moderate, and at the first sign of a halt in the price-advance in London it is considered that consumers would immediately adopt a waiting attitude. On Wednesday afternoon the market was barely steady.

With the advance in the lead price, belief is hardening that the opening price for zinc on January 2 will be very much higher than was at one time anticipated.

CLOSING PRICES AND TURNOVER DECEMBER 18-31

	December 18		*December 31*	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Tin				
Cash	£945	£946	£946	£947
Three months	£943	£943 10s.	£942	£942 10s.
Settlement	£945		£947	
Turnover	755 tons		610 tons	
Lead				
Current month	£96 10s.	£96 15s.	£106	£106 10s.
Three months	£96 5s.	£96 10s.	£103 10s.	£104
Turnover	4,550 tons		8,300 tons	

Iron and Steel

Iron and steel producers enter upon the new year quietly confident that the end of the steel shortage is in sight. The first post war development plan is nearly complete and with increased capacity new output records have already been achieved. The planned increase in production this year amounts to no less than 1,500,000 tons which should suffice to meet all the requirements of home industry and also give a new impetus to the export drive.

Keener competition in world markets is envisaged, but the hunger for steel is universal and the low level of British prices compared with European and American quotation is a big advantage.

Mobilization of the vast tonnages of raw materials required for the fulfilment of the 1953 programme has been accorded close attention.

Home ore production continues to increase and it has just been announced by the Board of Trade that under a new agreement increased quantities of Swedish ores will be available to the U.K. as compared with 1952.

Even the scrap position has improved to some small extent. Imports are up about 100,000 tons; collection of home scrap is on a better scale and steel makers start the new year with bigger stocks of scrap than they have held for over twelve months.

It is believed that the recent spurt in steel production has enabled the makers to overtake most of the arrears in their deliveries and the allocations for the first quarter of 1953 notably to the shipbuilding industry are on a more generous scale. The effect of the limitations of steel supplies to the shipyards has certainly been serious.

Almost without exception shipbuilders' outputs for 1952 have been lower than in the previous year. However, an increase of nine per cent in shipbuilders' supplies have been authorized for the current quarter and it is hinted that steel rationing may be ended entirely before 1953 has run its course.

Surprisingly at this time of the year there has been a distinct improvement in the volume of iron and steel exports. Shipments to South Africa, the Middle East, Holland, Italy and Venezuela are all on a better scale and removal of some of the restrictions on trade with Australia and New Zealand is now confidently anticipated.

U.K. METAL & MINERAL IMPORTS—NOVEMBER

	Units	*Nov. 1952*	*Jan.-Nov. 1952*	*Jan.-Nov. 1951*	*Increase or decrease in 1952 over 1951*
Non-ferrous metals and manufactures					
Aluminium and alloys	Cwt.	414,012	4,414,984	3,332,358	+1,082,626
Bismuth*	Lb.	14,878	497,010	480,631	+ 16,379
Cadmium	Lb.	40,310	1,377,389	1,346,827	+ 30,562
Cobalt and alloys	Lb.	348,115	3,248,651	2,974,081	+ 274,570
Copper:					
Electrolytic	Tons	11,246	192,145	203,221	– 11,076
Other	Tons	20,034	161,368	124,660	+ 36,708
Lead	Tons	7,146	133,034	147,693	– 14,659
Mercury	Lb.	38,018	545,250	1,319,667	– 774,417
Nickel	Cwt.	19,985	120,255	92,808	+ 27,447
Tin	Tons	103	2,801	9,303	+ 6,502
Zinc	Tons	16,983	211,676	105,532	+ 106,144
Ores and Concentrates:					
Antimony ore and conc.	Tons	1,767	17,621	23,580	– 5,959
Bauxite	Tons	16,696	249,303	316,534	– 67,231
Chromium ore	Tons	12,493	156,524	125,051	+ 31,473
Iron pyrites†	Tons	47,301	443,651	311,881	+ 131,770
Manganese ore	Tons	23,505	389,699	351,044	+ 38,655
Molybdenum ore	Cwt.	8,913	62,677	51,644	+ 11,033
Nickel ore, conc. & matte	Tons	2,957	31,504	32,689	– 1,185
Tin ore and conc.	Tons	3,510	50,390	45,437	+ 4,953
Titanium:					
Ilmenite	Tons	5,850	94,237	77,804	+ 16,433
Other sorts	Tons	764	8,593	8,829	– 236
Tungsten ore	Tons	699	7,511	4,129	+ 3,382
Zinc ore and conc.	Tons	24,614	182,257	164,163	+ 78,094
Non-metalliferous mining products:					
Asbestos	Tons	9,253	118,274	110,033	+ 8,241
Magnesite	Tons	840	20,767	20,719	+ 48
Sulphur	Tons	38,474	397,283	386,997	+ 10,286

*Excluding bismuth alloys. †Including cupreous iron pyrites.

JANUARY 1 PRICES

COPPER

Electrolytic ... ... £285 0 0 d/d

LEAD AND TIN

(See our London Metal Exchange report for Thursday's prices)

ZINC

G.O.B. spelter, foreign, duty paid ... £110 0 0 d/d
G.O.B. spelter, domestic ... ... £110 0 0 d/d
Electrolytic and refined zinc ... ... £114 0 0 d/d
Special high grade ... ... £116 0 0 d/d

ANTIMONY

English (99%) delivered, 10 cwt. and over ... ... £225 per ton
Crude (70%) ... ... £210 per ton
Ore (60% basis) ... ... 20s. — 22s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) ... ... £454 per ton

OTHER METALS

Aluminium, £166 per ton.
Bismuth (5 cwt. lots) 17s. 6d. lb. (min. 2 cwt. ex-warehouse).
Cadmium (Empire), 14s. 4d. lb.
Chromium, 6s. 5d./7s. 6d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.oz.
Iridium, £60 oz. nom.
Magnesium, 2s. 10¼d. lb.
Manganese Metal (96%-98%) 2s. 2d./2s. 3d. per lb. d/d
Osmiridium, £40 oz. nom.
Osmium, £65/£70 oz. nom.
Palladium, £7 15s./£8 10s. oz.
Platinum, £27/£33 5s.
Rhodium, £42 10s. oz.
Ruthenium, £25 oz.
Quicksilver, £70 10s./£71 ex-warehouse
Selenium, 25s. nom. per lb.
Silver 72¾d. f.oz. spot and f'd.
Tellurium, 18s./19s. lb.

ORES, ALLOYS, ETC.

Bismuth ... ... 40% 7s. 6d. lb. c.i.f.
30% 6s. 3d. lb. c.i.f.

Chrome Ore—
Rhodesian Metallurgical (lumpy) £13 2s. per ton c.i.f.
,, ,, (concentrates) £13 2s. per ton c.i.f.
,, ,, Refractory £12 14s. per ton c.i.f.
Baluchistan Metallurgical ... £14 15s. 6d. per ton c.i.f.
Magnesite, ground calcined ... £26 - £27 d/d
Magnesite, Raw ... ... £10 - £11 d/d
Molybdenite (85% basis) ... 105s. 10d. per unit c.i.f.
Wolfram (65%) ... ... 370s. c.i.f. U.K. buying
,, ,, ... 432s. 6d. d/d U.K. selling
Scheelite ... ... 360s. c.i.f. U.K. buying
,, ... 422s. 6d. d/d U.K. selling
Tungsten Metal Powder (for steel manufacture) ... 30s. 8d. nom. per lb. (home)
Ferro-tungsten ... ... 27/6-28/- nom. per lb. (home)
Carbide, 4-cwt. lots ... ... £32 3s. 9d. d/d per ton
Ferro-manganese, home ... £48 12s. 11d. per ton
Manganese Ore U.K. (48% - 50%) ... ... 6s. per unit
Brass Wire ... ... 2s. 8¾d. per lb. basis
Brass Tubes, solid drawn ... 2s. 2¾d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

Over the Christmas period, market conditions were quiet and turnover small. A firm undertone prevailed, however, and brokers reported more interest.

The new Anglo-Iranian debenture has been the main topic of interest in the market during the second week. This £20,000,000 issue is likely to start 1953 with a major staggering jamboree. The stock is a good one and is expected to go to a small premium.

Kaffirs mostly showed good gains over the period although there were some suspicions of window dressing by the leading finance houses. U.S. Government figures indicate that some foreign countries are turning their dollar reserves into gold and this is a significant straw. Rand dividends for the year were some £3,000,000 below 1951, but Johannesburg circles are hopeful that the rise in working costs may be neutralized during 1953. Nervous buying from Paris was reported on political developments in France and fears over the future of the franc. West Driefontein were a good feature. This mine is beginning to compare favourably with its next door neighbour, Blyvoors The Rand Selection unsecured note issue was a failure. Some £635,000 was applied for out of a total of £1,600,000. Against this, the recent offer of new shares by Stilfontein Gold was a success. The great bulk was taken up by shareholders and the small balance remaining was heavily over-subscribed.

Free State Geduld announced that de-watering of their No. 2 shaft had been completed down to the bottom station and cementation of the main fissure had been successful. The Treasury are now unlikely to raise any objection to option certificates to bearer being issued. The O.F.S. market has many option issues now current which, to date, have necessarily been registered, thus attracting the heavy 2 per cent stamp duty. This has cramped the market, and conversions to bearer can be expected. In this connection, the Government is setting up a commission to investigate the advisability of issuing no par value shares in this country. Such a move, if carried out, would be a great boon to the whole field of investment in the U.K.

West African interest centred around Ashanti which rose another 1s. 3d. on hopes that the pending interim report would make further mention of the good values recently encountered. Market circles do not think that much change can be made in the dividends during the coming year as winding of the rich ore is unlikely to take place before the south shaft is completed in the autumn. Vague doubts are also expressed over developments at the bottom level of the mine.

Cam & Motor were quoted in their new half-crown form for the first time. Prospects of this mine have been favourably commented upon by the Press and it is noteworthy that the company have been operating a pilot plant which has improved recovery by as much as 0.5 dwt. per ton.

Coppers improved with the general trend and investors have been looking rather to the longer term prospect for base metals than to the immediate twelve months' view. Rhodesia Anglo-American alone slipped back on uncertainty over the full implication of the exchanging of holdings in the subsidiaries for Anglo-American Corporation shares.

Amalgamated Tin were firm on good columbite production figures, but gold and base metals fell on news that American Smelting do not propose to continue their lead/zinc option in Southern Nigeria. This decision surprised the market and there has been speculation as to the reason for it. Beralts fell sharply on the lower dealing price for tungsten.

Lead/zinc shares were firm on the good price of lead which now stands at over £105 per ton. American circles anticipate that zinc, after initial weakness, may also strengthen during the coming months. Mount Isa were the principal beneficiaries from this news. Consolidated Zinc and North Broken Hill both fell on news that owing to an industrial dispute lead production has been suspended at the smelters.

FINANCE	Price Dec. 31	+ or −
African & European	2 3/8	+ 1/16
Anglo American Corpn.	5 1/8	− 1/16
Anglo-French	18/-	.....
Anglo Transvaal Consol.	21/3	.....
Central Mining (£1 shrs.)	33/1½	.....
Consolidated Goldfields	44/6	+1/3
Consol. Mines Selection	24/4½	+1/10½
East Rand Consols	2/3	.....
General Mining	4 1/16	+ ½
H.E. Prop	30/-	.....
Henderson's Transvaal	8/6	+3d
Johnnies	48/9	+1/3
Rand Mines	4 1/16 XD	+ 1/16
Rand Selection	34/4½	+7½d
Strathmore Consol.	25/6	+6d
Union Corp. (2/6 units)	29/9	+4/9
Vereeniging Estates	3 1/16	.....
Writs	29/4½	.....
West Wits	43/1½ XD	+1/3
RAND GOLD		
Blyvoors	43/- XD	+3d
Brakpan	16/- XD	.....
City Deep	25/7½ XD	+1/3
Consol. Main Reef	31/3 XD	.....
Crown	40/- XD	+1/10½
Daggas	3 13/16 XD	+ 1/16
Doornfontein	27/6	+1/3
Durban Deep	2 11/16 XD	.....
E. Daggas	19/4½ XD	+7½d
E. Geduld ... (4/- units)	40/- XD	.....
E. Rand Props	3½ XD	+ 1/16
Geduld	5 15/16 XD	− 1/16
Govt. Areas	14/9 XD	.....
Grootvlei	27/3 XD	+4½d
Libanon	11/- XD	+1½d
Luipaards Vlei	23/- XD	.....
Marievale	19/6 XD	.....
Modderfontein East	21/3 XD	−7½d
New Kleinfontein	28/1½ XD	+7½d
New Pioneer	13/9	+1/9
Randfontein	26/7½ XD	+9d
Robinson Deep	11/3	+9d
Rose Deep	19/6 XD	−6d
Simmer & Jack	6/- XD	+4½d
S.A. Lands	31/10 XD	.....
Springs	6/9 XD	−1½d
Stilfontein	23/- XR	+1/3
Sub Nigel	45/- XD	+1/3
Van Dyk	10/-	.....
Venterspost	16/- XD	+9d
Vlakfontein	16/9 XD	−3d
Vogelstruisbult	30/- XD	+6d
West Driefontein	6 1/16	+ 1/16
W. Rand Consolidated	54/4½ XD	+1/3
Western Reefs	44/4½ XD	+7½d

O.F.S.	Price Dec. 31	+ or −
Freddies	7/3	+9d
Freddies N.	8/4½	+6d
Freddies S.	8/10½	+1/1½
F.S. Geduld	2 9/16	+ 1/16
Geoffries	14/9	−6d
Harmony	19/6	+3d
Loraine	6/4½	+1½d
Lydenburg Estates	9/-	+6d
Merriespruit	5/-	+4½d
Middle Wits	14/6	−3d
Ofsits	36/10½	.....
President Brand	18/3	+1/-
President Steyn	18/3	+1/-
St. Helena	16/1½	+1/6
U.F.S.C. & G.	7/3	+1½d
Virgina Ord.	12/6	+3d
Welkom	19/3	+3d
Western Holdings	3 11/16	+ 1/16
WEST AFRICAN GOLD		
Amalgamated Banket	1/6	.....
Ariston	5/10½	+1½d
Ashanti	22/3	+1/3
Bibiani	5/10½	+1½d
Bremang	2/1½	.....
G.C. Main Reef	3/1½	−1½d
G.C. Selection Trust	6/-	+3d
Konongo	2/7½	+1½d
Lyndhurst Deep	1/1½	.....
Marlu	1/1½	−1½d
Taquah & Abosso	3/3	+6d
AUSTRALIAN GOLD		
Boulder Perseverance	2/3	.....
Gold Mines of Kalgoorlie	11/3	−6d
Great Boulder Prop	7/-	.....
Lake View and Star	16/3	.....
Mount Morgan	18/-	−6d
North Kalgurli	12/9	.....
Sons of Gwalia	8/9	+6d
South Kalgurli	7/3	−4½d
Western Mining	10/3	−7½d
MISCELLANEOUS GOLD		
Cam and Motor	9/4	.....
Champion Reef	6/9	+3d
Falcon Mines	7/6	+3d
Globe & Phoenix	25/-	.....
G.F. Rhodesian	5/9	.....
London & Rhodesian	4/10½	.....
Motapa	1/7½	.....
Mysore	3/3	−1½d
Nundydroog	6/3	+3d
Ooregum	3/3	−1½d
Oroville	11/3	.....

MISCELLANEOUS GOLD (contd.)	Price Dec. 31	+ or −
St. John d'El Rey	27/-	+1/4½
Zams	34/-	+9d
DIAMONDS & PLATINUM		
Anglo American Inv.	4½	+ 7/16
Casts	25/-	.....
Cons. Diam. of S.W.A.	4½ XD	−½
De Beers Defd. Bearer	70/-	+3/-
De Beers Pfd. Bearer	14½	+½
Pots Platinum	8/10½	.....
Watervaal	15/-	.....
COPPER		
Chartered	57/1½	+9d
Esperanza	3/7½	.....
Indian Copper	4/7½	.....
Messina	3 13/16	+ 1/16
Nchanga	6 13/16 XD	.....
Rhod. Anglo-American	53/-	−3d
Rhod. Katanga	10/3	+6d
Rhodesian Selection	15/4½	−1½d
Rhokana	19½	+1
Rio Tinto	23½	+½
Roan Antelope	13/7½	+3d
Selection Trust	36/6 XD	+1/-
Tanks	61/-	+2/-
Tharsis Sulphur Br.	41/3	.....
TIN (Eastern)		
Ayer Hitam	24/4½ XD	−7½d
Bangrin	7/9	+1½d
Gopeng	10/7½	+1½d
Hongkong	7/-	−6d
Ipoh	19/-	.....
Kamunting	12/-	+6d
Kepong Dredging	5/10½ XD	−1½d
Kinta Tin Mines	13/6 XD	−6d
Malayan Dredging	25/1½ XD	+7½d
Pahang	15/10½	+1½d
Pengkalen	10/4½	.....
Petaling	14/3	+6d
Rambutan	12/-	.....
Siamese Tin	22/6	−3d
Southern Kinta	14/9	.....
S. Malayan	24/7½ XD	−10½d
S. Tronoh	12/3 XD	−3d
Sungei Kinta	18/1½	−7½d
Tekka Taiping	7/6	.....
Tronoh	24/9 XD	−1/3
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	10/1½	+4½d
Beralt Tin	28/9 XD	−5/9
Bisichi	4/4½	−1½d
British Tin Inv.	15/1½	+3d
Ex-Lands Nigeria	4/6	−3d

TIN (Nigerian and Miscellaneous contd.)	Price Dec. 31	+ or −
Geevor Tin	14/4½	.....
Gold & Base Metal	2/10½	−6d
Jantar Nigeria	11/6	+3d
Jos Tin Area	9/9 XD	−6d
Kaduna Prospectors	2/9 XD	−1/-
Kaduna Syndicate	3/3 XD	−1/-
London Tin	5/6	.....
United Tin	2/4½	−4½d
SILVER, LEAD, ZINC		
Broken Hill South	45/7½	+7½d
Burma Corporation	1/6	.....
Consol. Zinc	25/3	−3d
Lake George	14/6	+6d
Mount Isa	34/4½	+1/4½
New Broken Hill	22/3	−6d
North Broken Hill	50/-	.....
Rhodesian Broken Hill	14/1½ XD	−4½d
San Francisco Mines	24/4½	+1½d
Uruwira	4/1½	+1½d
MISCELLANEOUS BASE METALS & COAL		
Amal. Collieries of S.A.	45/3 XD	−1/-
Associated Manganese	39/6 XD	−3/-
Cape Asbestos	18/3 XD	+6d
C.P. Manganese	51/-	−3d
Consol. Murchison	27/-	−1/-
Mashaba	8d	.....
Natal Navigation	2 11/16 XD	.....
Rhod. Monteleo	11/3	−3d
Turner & Newall	99/6	+6d
Wankie	16/4½	−1½d
Witbank Colliery	55/-	.....
CANADIAN MINES		
Dome	$36½	−$1
Hollinger	$30½	.....
Hudson Bay Mining	$98	.....
International Nickel	$82½	+$5½
Mining Corpn. of Canada	£4¼	−¼
Noranda	$141	+$1
Quemont	£6	.....
Yukon	4/3	−1½d
OIL		
Anglo-Iranian	5½	−1/16
Apex	41/10½	−1/10½
Attock	25/-	.....
Burmah	41/3	−1/3
Canadian Eagle	31/6	−1/-
Mexican Eagle	24/1½	+10½d
Shell (bearer)	79/4½	+7½d
Trinidad Leasehold	27/3	+1½d
T.P.D.	24/4½	−7½d
Ultramar	26/3	+7½d

COMPANY NEWS AND VIEWS

"Tanks" Loans More to Benguela Railway

Sir Ulick Alexander, chairman of Tanganyika Concessions, in his annual review to shareholders accompanying the report and accounts for the year to July 31 last, said that the Benguela Railway Co. had undertaken substantial commitments for capital expenditure, and the amounts due to Tanganyika Concessions of loan and current account have increased from £539,726 to £1,400,000 during the year. This increase, he stated, was due largely to the delivery of items ordered under the 1948/51 capital programme which for the years 1952/54 inclusive, now totalled £4,000,000.In this connection, he said, it was hoped to finance these additional capital requirements out of the railway's earnings, at the same time leaving a margin sufficient to provide for current redemption of the existing four per cent debentures and the payment of one year's interest on these debentures each year, together with interests on the loan account at the rate of 5 per cent per annum.

Referring to the resignation of Mr. Maurice Hely-Hutchinson, who had been chairman of the company since 1942, Sir Ulick said that he had differed from the rest of the board as to how the company's business should be conducted.

Current assets of "Tanks" were given in the balance sheet at £1,848,488 (£1,606,365) and included deposits with the Southern Rhodesian Government and Municipalities of £800,000 (nil), and cash amounting to £155,626 compared with £1,017,075 in the preceding year. Current liabilities and provisions totalled £1,768,280 compared with £1,018,147.

The profit and loss account was noted in last week's issue.

Labour Supply Position Steady at Lake George

The consolidated balance sheet of Lake George Mining Corporation to June 30 last showed that current assets totalled £1,666,652 (£1,204,000) which included cash in hand and with bankers of £933,707, or more than double the previous year's figure of £446,032. Current liabilities were also greater and amounted to £1,008,515 against £859,470.

Mr. J. M. Ireland, general manager, Lake George Mines Pty., in his report, said that the labour position at the mine during the year remained steady. In fact, there was a small net increase in the total labour force and the labour turnover was considerably lower than in the previous year.

Unfortunately, overall operating costs showed a substantial increase during the year to June 30 last, due to the heavy increases in rail freights imposed in October, 1951, the cost of supplies, and to the increases in the basic wage rates. The profit and loss account was noted in last week's issue.

West Africans Show Up Well in November

The November mine returns from the West African gold producers are unusually interesting.

Company	November, 1952 Tons (000)	Yield (oz.)	Profit* (£000)	Months since year end	Current Financial Year Total to Date Tons (000)	Yield (oz.)	Profit* (£000)	Last Financial Year Total to Date Tons (000)	Yield (oz.)	Profit* (£000)
A.B.A.	60	9,068	19.8	2	115	18,350	46	112	17,582	53
Ariston Gold	30	10,589	57.5	2	60	20,361	104	55	19,207	95
Ashanti	22	15,000	78.0	2	44	29,500	153	37	28,543	144
Bibiani (1927)	31	6,031	11.3	2	62	12,066	23	60	12,050	31
Bremang†	615	2,447	7.1	11	6627	31,338	163	7595	36,953	193
G.C.M.R.	9	3,551	13.9	5	42	15,881	48	43	15,298	55
Konongo	2	2,195	9.6	2	5	4,373	20	4	4,364	20
Marlu Gold	42	4,032	11.5	2	82	8,125	24	83	7,677	24
Nanwa Gold	3	667	N/A	11	31	7,533	N/A	29	5,089	N/A
Taquah and Abosso	23	5,562	1.4	8	174	40,381	L50	167	39,801	L16

*Including premium revenue since November, 1951. As the basis of calculating monthly profit varies from company to company a direct comparison one with another is not possible. The basis for any one company has, however, remained consistent, unless otherwise indicated.
†Ore treated given in cu. yd. L indicates a loss.

Ariston for the second month running operated at mill capacity and total ounces recovered constitute a record for the company. The previous record figure was announced in August last when 10,350 oz. were recovered. Consequently, working profit advanced by approximately £11,000 and the cumulative results to date show a sizeable increase over the corresponding period of the previous year.

Ashanti Goldfields announced what gives every indication of being a very important strike in a crosscut on level 12 on the Obuasi Reef, which gave a reef width of 57 ft. averaging 46.8 dwt. It is not yet known whether this exposure extends for any distance but assuming that it is not just a small section of high-grade ore, a considerable quantity of ore of this grade could have a marked effect on Ashanti's future prospects even though the average grade of its ore reserves are estimated at around 18.4 dwt. per ton. In any event, Ashanti's November results were good enough to single it out for special comment, as its tonnage throughput has only been equalled once in the last two years and the ounces recovered and the profit figure were well above average.

Taquah & Abosso's results call for special comment for its profit figure is the first recorded on the credit side of the ledger since September 1951. There are grounds for believing this improvement will continue.

Of the other gold producers listed below, Bremang with only one more month to go does not appear likely to show results comparable with the previous year, while it is doubtful whether Nanwa will continue to publish monthly returns in the New Year.

"Indians" in November

On April 1, 1951, the four Kolar Gold Fields companies, Champion Reef, Mysore, Nundydroog and Ooregum commenced operations under their Indian registration. In the circumstances when we began to publish these four companies' monthly production results in tabular form the financial year-end for each company was taken as from March 31, 1951. However, at the annual general meeting of these four companies it was made clear that the respective boards wished to continue the practice of the Sterling Companies of terminating their financial year on December 31, and the accounts were duly closed at that date to cover a nine-month period of operation.

Yet in order to present a clear picture month-by-month of the current year's operations compared with the corresponding period of the previous year, the monthly output returns were based on the date of the effective take-over, namely March 31. Thus the output returns for October which appeared in our issue of October 10 last records the number of months as seven since the companies' year-end, whereas, to conform with the companies' reversion to the Sterling Companies' practice of terminating their financial year at December 31, the following table has been readjusted to take this into account so that the monthly returns listed below on a cumulative basis represent eleven months of each company's financial year.

Company	November, 1952 Tons (000)	Yield (oz.)	Months Since Year End	Current Financial Year Total to Date Tons (000)	Yield (oz.)	Last Financial Year Total to Date Tons (000)	Yield (oz.)
Champion Reef	10	3,562	11	141	62,565	156	64,639
Mysore	15	6,405†	11	190	68,068	169	53,756
Nundydroog*	23	6,395	11	240	61,346	210	50,202
Ooregum	10	2,274	11	116	31,950	112	28,678

*Includes tailings.
†Includes 78 oz. recovered from slag.

Broadly speaking, the November returns are well below average. Indeed, the decline in output from Champion Reef was unexpectedly large and obviates any hope there might have been for the company overhauling the previous year's total.

Mysore put a lower tonnage through the mill than it has done for the past two years but the total yield is above the average for the year.

Nundydroog maintained the high tonnage throughput and yield characteristic of its operations in recent months but Ooregum, with better than average throughput failed to maintain a comparable output and the November figure was the lowest monthly production figure announced since January last. On the other hand, the total production to date is approximately 900 oz. above the output for the whole of 1951.

Company Shorts

New Year Honours.—Among the Baronetcies in the New Year's Honours list which will have particular interest for *The Mining Journal* readers are those created for Sir Clive Baillieu, chairman of Central Mining and Investment Corporation, Dunlop Rubber Co., etc.; and for Sir Robert William Hugh O'Neill, chairman of Frontino Gold Mines and St. John d'el Rey Mining.

Knighthoods were conferred on Mr. Lincoln Evans, general secretary, Iron and Steel Trades' Confederation; Mr. Harold R. Cox, chief scientist, Ministry of Fuel and Power; and Mr. Charles K. F. Hague, deputy chairman and managing director of Babcock and Wilcox. Sir Ulick Alexander, chairman, Tanganyika Concessions and Sir Ernest A. Gowers, each receive the G.C.B.

C.B.E. awards included Mr. C. J. Turner, chief engineer, Division of Atomic Energy; Mr. F. A. H. Whetmore, lately joint managing director Billingham Division I.C.I.; and Mr. L. V. Keitley-Duff, lately general manager in Bolivia of the Antofagasta-Bolivia Railway. O.B.E. (Honorary) awards included Mr. Jean I. J.-M. G. de la Vallee Poussin, managing director, Uruwira Minerals.

Christmastime.—Once again *The Mining Journal* received at Christmastime a delightful variety of calendars and Christmas cards from friends and well wishers. In particular, we would like to acknowledge the good wishes for the New Year received from the following: British Insulated Callenders Cables Ltd.; The Bristol Aeroplane Co. Ltd.; Cleaners Ltd.; The Denver Equipment Co.; J. S. Forsaith & Son Ltd.; Holman Brothers Ltd.; Hugh Wood & Co. Ltd.; McGraw-Hill; The Netherlands Embassy; The Polish Embassy; Ruston Bucyrus Ltd.; Richard Sutcliffe Ltd.; J. W. Vickers & Co. Ltd.; and Westfalia Lünen. We would like to take this opportunity of again wishing all our friends at home and abroad a Happy and Prosperous New Year.

GEOPHYSICIST required for Malaya. Salary according to qualifications and experience. Write stating age, full particulars of qualifications and experience. Box No. 529, The Mining Journal Ltd., 15, George Street, London, E.C.4.

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MOUNT ISA MINES

MR. J. KRUTTSCHNITT'S SURVEY

The Twentieth Ordinary Annual General Meeting of Mount Isa Mines Ltd., was held on December 8 in Brisbane.

Mr. J. Kruttschnitt (chairman of the company) presided and in the course of his speech said:—

The year ended June 30, 1952 was a very profitable one for your company. Prices for metals were extremely high, and production rate was good. The profit for the year under review amounted to £2,179,758, compared with £1,360,842 for the previous year, and was struck after providing £111,568 for interest on debentures, £800,000 depreciation on buildings, plant and machinery, £2,169,066 lead bonus paid to employees as awarded by the Industrial Court of Queensland, and £2,135,282 provision for income tax. The increase in profit is due to increased production, increased prices realized for metals throughout the year, and improved rate of shipment of zinc concentrates.

During the year the basic wage was raised by £2 1s. 0d. per week to £11 7s. 5d. and there were very substantial increases in the price of all supplies and services. Consequently, the operating cost per ton of ore mined and treated, exclusive of the lead bonus, amounted to 91.9s., compared with 80.58s. for the previous year.

Lead-zinc ore reserves were increased by 353,340 tons to a total of 9,852,250 tons. The increase was recorded after giving effect to the ore mined during the period. There was an increase in the reserves of copper ore of 813,700 tons to a total of 3,765,350 tons.

A vigorous programme of exploration and development in the vicinity of the mine was carried out through the year with encouraging results.

Other prospecting areas have been taken up south of the present mine, and geological examinations are being made in these areas.

In the General Manager's report reference is made to diamond drilling and development work at the Northern Leases. Diamond drilling and development work throughout the year gave further evidence of important silver-lead-zinc mineralization, but considerable exploration work must still be carried out before an estimate can be made as to the productive capacity of this area. At the present it can only be said that the area is very interesting, and information obtained to date suggests the occurrence of sizable ore-bodies.

COPPER PLANT CONSTRUCTION

Slow delivery of plant for the copper smelter has prevented us from completing this plant and commencing copper production. The concentrator and crushing section for copper ore are ready for operation, and the necessary extensions to the power plant, etc., are finished. However, some work still remains to be done to complete the copper smelter, and it is not anticipated that production of copper will commence until the beginning of the New Year.

The delay in completion of this plant has been most disappointing, and also the cost of construction has greatly exceeded our original estimate. For this, and other reasons, we have appropriated £1,000,000 from the profits of the year under review for completion of the copper plant and other work, as your directors consider that the inflated cost of completing this plant should be financed from profits and not by raising additional capital.

OUTLOOK FOR THE IMMEDIATE FUTURE

Whether the present surplus supplies of lead and zinc is real or artificial should be revealed within a short period. There are those who believe that freeing of the London lead market coupled with reports that the British Government intends decontrolling the zinc market on January 1, had the effect of creating an artificial surplus of the two metals. Opinion along these lines was expressed in Washington on November 2 by Mr. Jess Larson, Administrator of Defence Materials Procurement, while discussing the possibility of a shortage of these metals next year in the U.S.A. if marginal mines continued to suspend operation because of present price recessions.

During the past two or three years increase in the cost of labour, materials and transportation have resulted in substantially higher production costs. If the lead price, for example, remains for long at 14c. or less it seems more likely that a decline in production must follow as marginal producers close, and the true relationship between supply and demand will be revealed in the course of a few months. The supply-demand position in the U.S.A. is reported as maintaining a satisfactory balance, from which one can assume that the rather violent price decline in the London and Continental markets after decontrol of lead resulted from "dumping" or manipulation on the London Metal Exchange.

One must contemplate with a certain amount of apprehension what is likely to transpire when zinc is released to the free market about the first of the year. It is to be hoped that decontrol of zinc market and prices will be effected in a more orderly fashion than in the case of lead.

The report and accounts were adopted.

ANGLO BURMA TIN CO.

The Twenty-Sixth Annual General Meeting of the Anglo Burma Tin Co. Ltd., was held on December 29 at the Registered Office of the Company, 208/224, Salisbury House, E.C.2.

Mr. John Miller (Chairman) who presided, in the course of his speech said:—

Current Assets are somewhat lower at £142,614 compared with £163,968, but after deducting current liabilities and future tax reserve, which are also lower on this occasion, the balance of net cash assets is £103,094 compared with £91,608 at the end of the previous year, despite the repayment of £8,812 Debentures during the year.

The Tributing operations continued throughout the year but production on this basis only amounted to 73 tons of tin concentrates, a fall of 140 tons, compared with the previous year. The average price of Metallic Tin at which our production was sold, was also lower at £939 per ton compared with £1,087 in the previous year, the output realizing £49,755 compared with £167,761.

Our revenue for the year has however been materially assisted by the settlement in the sum of £41,917, of the company's insurance claim for loss of profits which resulted from the damage caused to our plant in March 1951.

In consequence we are able to show a net profit for the year of £3,058 after providing £6,150 for taxation, and, adding the £4,972 balance of profit brought forward from last year, there remains a sum of £8,030 which has been carried forward.

I would like to refer briefly to certain Balance Sheet changes which have occurred since the end of our year.

On June 30, 1952, the Debenture indebtedness of £69,688, shown in the Balance Sheet before you, was reduced by £7,850 by virtue of the second annual drawing, whilst £288 Debentures were also purchased in the open market. In July, 1952, an offer was made to the holders of the remaining £61,550 outstanding Debentures to purchase their holdings at the rate of £110 per £100 Debentures, the purchase price to be satisfied as to £76 in cash and as to the remaining £34 by the issue of shares at par.

This offer was accepted by holders of £59,000 Debentures leaving only £2,550 now outstanding.

The cash cost of these various Debenture repayments amounted to approximately £53,000, and the shares issued in part payment of the purchase price have resulted in an increase in our issued share capital to £86,661.

Shareholders will remember that when the company regained possession of its properties in 1946, after the Japanese occupation, our available cash was practically exhausted, outstanding 6 per cent Debentures totalled over £78,000, and heavy arrears of interest thereon had accumulated. In addition, the company was then obliged to borrow further moneys on a Prior Lien Debenture, in order to finance the rehabilitation of its plant and other assets.

We are sure therefore that shareholders will share our satisfaction that we have been able to eliminate these prior charges and at the same time to build up a more satisfactory cash position.

CONDITIONS IN BURMA

During the whole of the past financial year, as already mentioned, tribute operations only were in progress. This position still maintains and it is now nearly two years since it became necessary to withdraw the European staff from the Mine to the town of Tavoy, and plant operations ceased.

Despite successes by the Government forces in their campaigns against the insurgents in various parts of Burma, we regret that, there appears to be little prospect of an early resumption of normal operations at our Heinda Mine. Our property is situated inland in jungle country and transport on the 40 miles of road from Tavoy continues to be subject to ambush and, in their isolated locations, our mine and Hpaungdaw power plant remain vulnerable to interference by armed insurgents.

The tribute operations for the past financial year produced 73 tons of tin concentrates and we are pleased to say that for the first 6 months of the current year, to the end of November, a production of 70 tons has already been obtained.

We cannot expect this output rate to be maintained during the coming dry season and in any event, under present circumstances, even tribute production is very precarious and liable to fluctuation at any time.

The tributing results achieved during the current year to date have enabled us at least to maintain our liquid resources.

Although in the prevailing conditions this can be considered as not unsatisfactory, it must be remembered that the present methods of operation can never be expected to be profitable in the true sense. Furthermore, the longer the existing conditions continue the greater will be the eventual cost of reconditioning plant and other fixed assets.

I would again like to express our thanks to our General Manager, Mr. Wilton, and the small European and Asiatic staff we have retained, for their loyal and valuable services during another extremely difficult year.

The report and accounts were adopted.

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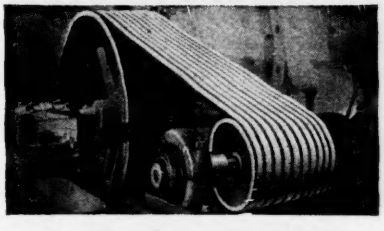

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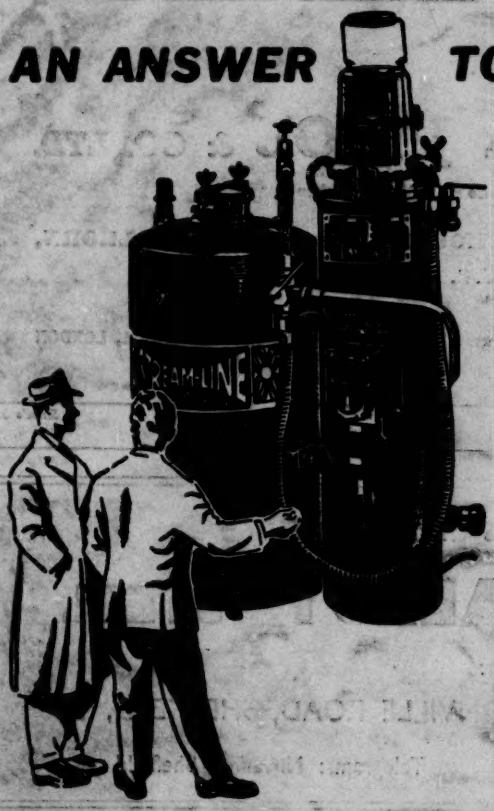

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